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S. HRG. 103–388

U.S. ENVIRONMENTAL TECHNOLOGY IN THE GLOBAL MARKETPLACE

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U.S. Environmental Technology in th...

HEARING

BEFORE THE

SUBCOMMITTEE ON FOREIGN COMMERCE AND TOURISM

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

JUNE 24, 1993

Printed for the use of the Committee on Commerce, Science, and Transportation

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U.S. ENVIRONMENTAL TECHNOLOGY IN THE GLOBAL MARKETPLACE

THURSDAY, JUNE 24, 1993

U.S. SENATE,
SUBCOMMITTEE ON FOREIGN COMMERCE
AND TOURISM OF THE COMMITTEE ON
COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:10 a.m., in room SR–253 of the Russell Senate Office Building, Hon. John F. Kerry (chairman of the subcommittee) presiding.

Staff members assigned to this hearing: Troy H. Cribb, professional staff member, and Ivan A. Schlager, staff counsel; and Kevin M. Dempsey, minority staff counsel.

OPENING STATEMENT OF SENATOR KERRY

Senator KERRY. The hearing will come to order.

My apologies to folks for our delay. We are going to have a bunch of votes this morning. We just did two, back to back, when we were supposed to originally have had one. But we may have to cope with a few interruptions as we go through the course of the hearing because of the voting schedule.

This morning, we are going to explore in the course of this hearing the importance of a growing new industry, the environmental, or what we call the "envirotech industry," and explore ways in which the Government can really work to encourage the exports of environmental technology, both goods and services. I think that the whole country is becoming more sensitized to the impact of defense cutbacks and also to the prolonged recession—or slow recovery, depending on which argument you want to make—and as a result of that, I think there is an opportunity that has been agreed upon for a great deal of a shifting of emphasis of R&D efforts, product development, and so forth, toward new areas.

There is also, obviously, no single answer to that problem. I do not think we gather here with the notion that environmental technology is the be-all and end-all that will totally supplant other industries and have the same economic force. But it seems to me that as one analyzes the possibilities of all the areas, at least in the near term—whether we are looking at in terms of the new technologies, advanced materials, artificial intelligence, robotics, microelectronics, and so forth—environmental technology, which can encompass portions of each of the aforementioned, has an extraordinary capacity to provide this country with an economic lift.

Moreover, witnessing what has happened in terms of Japanese and German technology in areas, for instance, affecting the Clean Air Act, it is evident again to those following this that when you do not push the technology curve, when you hold back with a notion that you are somehow saving money in the short term because you are not raising the business expenses or requirements to meet certain standards, you are, in effect, restraining our job growth opportunities and our product sales. I think this conclusion is very evident as we look now at the new competition in certain areas of alternative energy sources, renewables, and some of the new technologies surrounding those such as photovoltaics and so forth, where there has been a big shift in the capacities of our competitor nations.

It is also evident that if we are going to raise the standard of living of Americans, if we are going to have high-quality jobs that are well-paying, we are going to have to produce high-value-added products and not depend on—and this has become almost trite in the reference but is very real—not depend on flipping hamburgers or opening drug stores or doing other kinds of things but rather look to the new products that will allow us to sell to less-developed nations who are going to be the marketplace of the future.

This industry, to some degree, confounds the conventional wisdom that environmental protection is the enemy of economic growth, rather than, as I believe and as others who are here to testify today believe, a prerequisite to growth and is a key element of our long-term economic health and recovery. I see different figures. There was an article this morning, I do not know if I have it with me here, but I was looking at it earlier, that pegs the current revenues somewhere in the hundreds of billions—I forget—$150, $180 billion or so. It is often referred to as a $200 billion business that may grow to $400 billion or more by the end of the decade. And I think that when you consider the fact that we begin with a 40-percent share of the world's market, we clearly have an enormous capacity to expand.

But my friends, we have begun before with 80 and 90 percent shares of the world market in certain industries, only to see a kind of lackadaisical, slaphappy approach, even an arrogance, and we have watched that share slip down to near zero in some cases. So, the current 40 percent is a benchmark that ought to, in light of what we have seen in the electronics industries and in other industries, computer chips and so forth, make us very wary of simply taking that for granted.

It is also my sense that as we watch the environment emerge as a far more critical element of our trade negotiations, whether it is NAFTA or GATT, this concern, I believe, will be a central element of the new paradigm of international relations where, just as we spent 50 years arguing around nuclear arms reduction and the proper allocation of forces in the world. I believe, as we go into these next 25 years or more, we will be arguing about the proper allocation of resources in the world and how to develop and grow intelligently.

The concept of sustainable development is only now being fleshed out, and if you want to divide the new paradigm of national security, international security, I believe that this is one of the key cor-

nerstones of that new definition of international security, together with narcotics, international narcotics trafficking, financial crime across borders, terrorism, conflicts based on ethnic and ideological and religious grounds, and the whole resource allocation sustainable development issues.

This is one of those key components, and we need to think about it that way. And one of the ways we can do that is to pursue the options that will be laid out at this hearing today.

I have often referred to the disparity between our effort and other countries' efforts, and when I speak publicly on this issue, I have cited the few American companies that attended the Rio Conference as formal attendees to that conference, where you had 140-plus nations. You had some 50 American companies, one-half of which, I am proud to say, came from Massachusetts. The Japanese had some 700-plus companies formally accredited to that same conference, and if you read Lester Thurow and others who talk about the head-to-head competition of this next century, we should take that as a fair warning to those of us at this hearing this morning that environmental technology is a way of really focusing on the capacity of our country to be competitive and to compete.

Let me just say that there are many people who have awakened to this, none more so than the newly formed National Environmental Business Council growing out of the efforts of the Environmental Business Council in Massachusetts, and Don Connors and others, and I congratulate them on their efforts to help lead the business community of this country to a recognition of some of the things that I have just talked about.

It is my opinion that our Government should not engage in choices that the private sector might otherwise make unless there is a strong social reason for doing so, it must do all that it can to encourage the export of these environmental technologies and services.

Now, working with Congressman Studds as well as Senators Chafee, Baucus, and Lieberman, I recently introduced legislation called the National Environmental Trade Development Act of 1993, which will expand export promotion services available to envirotech companies. It will bring the private sector into the process of setting a strategy for environmental technology export promotion programs, and it will establish, I hope, a clear focus within our trade and export promotion programs on environmental technologies.

It is clear to me and to others that additional export promotion services are desperately needed in this country for all industries. A recent GAO report found that the United States spends 59 cents for every $1,000 of exports in nonagricultural export promotion, while France spends $1.99, Italy $1.71, and the United Kingdom $1.62. The United States ranks at the low end in the number of overseas export promotion staff per billion dollars in exports with 1.56 people; while the UK has 8.5 people; France, 5.87; Italy, 4.14; and Germany, 2.28. So, we are on the low end there, also.

Moreover, existing Government export promotion programs are an inefficient, bureaucratic maze, and are confusing to exporters. Ten Federal agencies operate over 150 export promotion programs, which, frankly, have been totally uncoordinated. As an example of the effects of the lack of coherent strategy, the Department of Agri-

culture receives 74 percent of the funds, even though agricultural goods only constitute about 10 percent of U.S. exports. This is yet another example of plainly absurd bureaucratese and misplaced politics.

This misallocation of resources is, frankly, inexcusable. And while our competitors abroad execute carefully crafted export strategies, we continue simply to shoot ourselves in the foot. The Trade Promotion Coordinating Committee which was given statutory authority through the efforts of Senator Rockefeller in the last Congress, will go some distance to improve coordination among agencies. But if we are going to defend our worldwide market share and the growing industry of envirotech, which has been targeted by Japan and Germany, we simply have to do more.

The National Environmental Trade Development Act of 1993 creates an interagency council to develop a strategy, to coordinate, to bring our environmental export promotion efforts to the forefront, and to bring the private sector into the planning process. And to ensure the implementation of this strategy developed by the council, we call on the President himself, acting through the Office of Environmental Policy and the National Economic Council, to coordinate the policies and programs of the agencies involved in enviro-export promotion.

Furthermore, in this bill we seek to expand the services available to envirotech companies by creating one-stop shopping for export information. The Department of Commerce currently operates the Trade Information Center which provides exporters information on foreign markets. It also operates export promotion one-stop shops in the U.S. and foreign commercial service offices. This bill adds expertise in the envirotech area to each of these offices, making them, in effect, one-stop shops for envirotech export information.

The bill also creates six new regional environmental business and technology centers, which are to provide hands-on technical assistance to small- and medium-sized businesses in their regions on exporting environmental technology. And this assistance would include demonstrations of U.S. goods and services for foreign purchasers, assistance with marketing and distribution, and the training of foreign businesses in the use of our environmental technologies.

I believe these centers can build on the success of the Environmental Business Council's efforts in Massachusetts, and bring businesses around the country the kind of technical business to business assistance that can only be provided with private sector involvement.

Now, obviously, providing this kind of assistance is not enough. It is important for us to educate those in the developing world about the importance of protecting the environment and about using methods that have already been developed for doing so. And for that reason this legislation seeks to create the Senior Environmental Service Corps as a new division of the Peace Corps. What we would like to have is Environmental Corps taking experienced U.S. environmental managers, regulators, educators, and other environmentalists, people with experience in business and elsewhere, to share that expertise with companies and individuals in developing countries.

There is an enormous amount to do on this front. I think that is evident to anybody who looks and analyzes the development problems of countries around the world, whether it is deforestation or desertification or the biodiversity issues in the treaty we have just signed or the increasing threat to our ecosystems of the ocean and water bodies, not to mention global warning, ozone depletion, et cetera.

As China, which is currently growing at 20 percent a year in the southern provinces, comes further on line economically, and as Southeast Asia emerges and Vietnam and other countries join in that, which they inevitably will, the pace of development and the pace of demand and destruction is simply going to increase. And unless we, as a leading industrial Nation, join with the G–7 and other countries to raise to a high level of concern the choices we need to be making, we are not only going to lose out on the environmental job possibilities that come with that, but we are going to lose out in a big way on the larger ecological challenges that we confront.

So, this makes sense on every single front. It is a three-for, four-for, or whatever you will: jobs, environmental safety, economic sense, national security sense, and a sound way to develop other countries. So, I hope that this hearing today will serve as a way of laying down a good record of what the realities are on these possibilities, and so I apologize for a fairly lengthy opening statement, but this is our first hearing in this area and I do want to try to explain why we are choosing to move in this direction and where we are going and what the importance is. Mr. Chairman, your comments, please.

OPENING STATEMENT OF SENATOR HOLLINGS

The CHAIRMAN. Too often, the credo of the U.S. Government has been to cling to a simplistic laissez-faire policy while our global competitors have used their governments to make fledgling industries into giants and to crack open foreign markets. As a result, the United States is losing ground to Japan and Germany in many of the key emerging technologies of the future.

Fortunately, we now have an administration that understands that companies and countries which lead in technology and manufacturing will lead in the quest for markets, jobs, and wealth. In this quest, the Federal Government should be a partner and not an antagonist to the private sector. That is precisely why I introduced S. 4, the National Competitiveness Act, earlier this year.

In this regard, export promotion is one area in which the Federal Government can play a critical role. I look forward to reviewing the testimony presented today on the potential for environmental technology in creating export opportunities for U.S. businesses. We must not assume that we can protect the environment only at the expense of jobs and progress but rather should look to the vast new world of technologies, jobs, and exports that are being created in this rapidly advancing field. While we cannot place our economy in a stranglehold of environmental regulations, we should take note that economic policies that are blind to environmental concerns eventually backfire. One need only to look at countries such as Po-

land and Hungary, which are cleaning up their environments as a prerequisite to building up their economies.

Also, one cannot talk about trade without thinking about the thousands of American jobs that are moving abroad on a fast track to countries where lack of environmental regulations lowers production costs. As President Clinton recently observed: "We live in an era of global economics, global environmentalism, global epidemics." The Montreal Protocol and the Earth Summit at Rio de Janeiro are notable forums for urging other countries to improve their environmental record so that U.S. companies can compete on a level playing field.

The administration is currently conducting a review of Federal export programs under the framework of the Trade Policy Coordinating Committee, which was established by the Export Enhancement Act of 1992 to form a strategy for streamlining the many export programs that are scattered among almost every major Federal agency. The challenges faced by small environmental export companies provide vivid examples of why the work of the TPCC is so important to the future export picture.

Envirotech businesses seeking overseas markets, like many other businesses, often have a difficult time securing export financing and assistance. They also need a convenient source of information on market demands in foreign countries and on foreign environmental regulations. The Department of Commerce, the Environmental Protection Agency, and our other Federal agencies can be an important source of information and assistance for these companies, particularly if the agencies are coordinating with each other. This hearing can provide some valuable information on the everyday experiences of companies seeking new markets.

Our Government also can play a pivotal role in the development of the envirotech industry by educating other countries about environmental protection. We have a wealth of information to share on problems ranging from soil conservation to acid rain, and a failure to share our knowledge is to our own detriment. Absent an effort to raise world environmental standards, increasing environmental regulations here at home will be like trying to plant a garden in the middle of an asphalt jungle.

I look forward to reviewing the testimony today on environmental technology development.

Thank you, Mr. Chairman.

Senator KERRY. Thank you, Mr. Chairman. Let me ask our first panel if they would come forward at this point. And we welcome each of you: Mr. Jonathan Sallet from the Office of Policy and Strategic Planning at Commerce; Jim Ekstrom, Acting Chief of International Operations, the Peace Corps; Donald Connors, Chairman, The Environmental Business Council; and William Snape, the Associate Counsel for Wildlife Policy, Defenders of Wildlife. Gentlemen, thank you all very much for being with us and sharing not only your expertise but your time.

Without further ado, let me ask each of you if you would make your opening statements. We can go in any order. Anybody who wants to—why do you not lead off, Mr. Sallet?

STATEMENT OF JONATHAN SALLET, DIRECTOR, OFFICE OF POLICY AND STRATEGIC PLANNING, DEPARTMENT OF COMMERCE

Mr. SALLET. Thank you, Senator. As long as we have the record open, let me note for the record that I grew up in Massachusetts and that I followed your political career for a long time, and it makes it a particular pleasure to appear here this morning to discuss these important issues and to testify on your bill, S. 1074.

The purpose of that legislation is clear: to help us develop a national strategy to promote U.S. exports of environmental products, services, and technologies. Let me just—in your opening statement, Senator, you mentioned the current export promotion activities. I will come to that in a second, but let me speak to it for a moment.

This is a time, as you know, Senator, there will be votes on the Senate floor tonight and tomorrow on the President's budget proposals and the Senate Finance Committee's actions. This is a time of scarce financial resources. Export promotion is every important. You noted a statistic about the relationship between the amount of money that is spent for agricultural export promotion as opposed to the actual amount of agriculture exports among the total U.S. exports.

Secretary Brown is working hard to bring into reality the vision of Congress when it created the Trade Promotion Coordinating Committee. We are working on it this summer. Our first report will be due in, issued in the end of September. We are going to try to deal with the very problems that you raised, too many agencies going in too many different directions. We are going to pull it together with an integrated strategy.

But when we come back to you, resource allocation is something that the Congress will need to think about. If we need more money for export promotion for manufacturing and technologies, as we believe we do, that will, as you correctly note in your opening statement, call for some political decisions about how we can best muster those kinds of resources.

This, the issue we are discussing this morning, is an important part of that. That is why the President has placed such a high priority on developing these initiatives. In his Earth Day directives, the President directed the Secretary of Commerce, and I know you were there, Senator, when the President made his Earth Day address here in Washington, he directed the Secretary of Commerce that day to chair an interagency effort that will develop an administration strategy to promote environmental technology and environmental exports. And we are going to make that strategy part of our larger overall export promotion strategy.

We share your enthusiasm, and we look forward to joining with you to bring this message of environmental growth to the American people and to people around the world. And that message has to go far and wide because these markets are, in every sense of the word, global.

Global demand is estimated to range by the end of the decade from $300 to $500 billion for environmental products, services, technologies. We know these markets exist, but for the reasons that you noted in your opening statement, we have to move quickly on them. Japan and Germany have already focused on these mar-

kets. We cannot afford to sit on what now seems to be a lead or even a strong position. We have to move forward, look at opportunities, opportunities in places like Mexico, where tremendous opportunities exist and where many U.S. companies already have a strong presence. Other nations in Latin America, Brazil, Chile, among others, offer great potential.

Possibilities exist as well in Asia, the newly independent States, Eastern Europe, and the EC, where we have global markets. Different issues, perhaps, in different parts of the world, but markets for environmental technologies in all of these places. But to do well, we need a concerted national mission.

We believe that the Department of Commerce is ideally suited to lead the administration's effort toward the creation of this mission. As you know, our work involves NOAA, which is a bastion of scientific research and environmental expertise, the International Trade Administration which works on trade promotion and trade development, NIST—the National Institute of Standards and Technology, which is involved in creating a series of technology outreach programs, advanced technology programs, R&D funding for precompetitive generic products, and manufacturing extension programs.

Yesterday, in fact, Secretary Brown testified before the Banking, Housing, and Urban Affairs Committee on the Department's comprehensive technology and trade strategy. We are geared toward aggressively promoting technological innovation and commercialization, while increasing U.S. exports. Secretary Brown is also a member of the newly constituted President's Council on Sustainable Development. The goal here is to preserve our global environment in a way that leads to strong and sustainable economic growth.

And today, as we speak, Secretary Brown is visiting the Great Lakes Manufacturing Technology Center in Cleveland. This manufacturing center is geared to provide technical assistance and training to managers to help them bring their manufacturing companies into the next generation of manufacturing technologies.

We are not doing this alone. We are working in partnership with the EPA and Carol Browner, who has already demonstrated great leadership at that agency, the Department of Energy, Ex-Im Bank, others of the 19 agencies that are involved in the trade promotion coordinating committee. Our working groups are now meeting to formulate a long-range strategic plan, and we will be, as we formulate that, working with private industry and soliciting their input.

I guess the one specific word that I would like to say about your legislation deals with close consultation with industry. We absolutely agree that industry must play an important role in developing an appropriate strategy to assist environmental companies in foreign markets. Secretary Brown has emphasized again and again the importance of achieving real economic growth through public-private partnerships.

Let me, if you would, rely on the submission of my testimony for the record for the remainder of our specific views, but just let me thank you for the opportunity to share with you briefly this morning my Department's views on your efforts. We applaud your work to carry out the President's commitment to fostering the growth of

U.S. environmental technology exports. We are encouraged by your legislation because it sends exactly the right signal. Increased focus and governmental effort on behalf of and in league with environmental technology.

We look forward to working closely with you to accomplish the administration's goal to protect the environment and to promote long-term economic growth.

Thank you, Senator.

[The prepared statement of Mr. Sallet follows:]

PREPARED STATEMENT OF JONATHAN SALLET

Good Morning. I am very pleased to represent the Secretary of Commerce in testifying on the National Environmental Trade Development Act of 1993. We believe the intent of this bill—to develop a national strategy to promote U.S. exports of environmental products, services, and technologies—is essential to creating new jobs domestically and helping other countries to meet their most basic needs to provide clean air and water to their citizens. Mr. Chairman, as you are aware, the President has placed a high priority on developing such an initiative as outlined in S. 1074 and we share your enthusiasm and effort to move ahead to support the U.S. environmental industry and carry out the Administration's goals.

Secretary Brown testified yesterday before the Senate Banking, Housing, and Urban Affairs Committee on the Department of Commerce's comprehensive technology and trade strategy. The Department's efforts are geared toward aggressively promoting technological innovation and commercialization of new technologies and significantly increasing U.S. exports. This vital link between technology and trade is perfectly illustrated by the subject of today's hearing: environmental technologies.

THE GLOBAL MARKET FOR ENVIRONMENTAL TECHNOLOGIES

We see an enormous potential for exports of U.S. environmental technologies. The global market, as cited in S. 1074 and other independent studies, is enormous and may surpass the aerospace industry in dollar terms and employment by the year 2000. With a market potential ranging from $300 billion to $500 billion for environmental products, services, and technologies, we cannot afford to ignore the possibilities for job creation, enhanced technology development and commercialization, and our major role in helping other countries protect their environment. Developing countries will probably see the largest growth rates although their absolute numbers will be small in comparison to those for industrialized countries. Mexico is, of course, a country where tremendous opportunities exist and where many U.S. companies have established a strong presence. Other nations in Latin America such as Brazil and Chile also offer great potential.

In Asia, there are also great possibilities for U.S. industry. For some markets such as China, Indonesia, Taiwan and Thailand the potential is great. However, in order to convert this potential to U.S. exports much needs to be done. We must assist these countries in establishing national environmental protection programs. This is where cooperation with agencies such as the Environmental Protection Agency (EPA) and the Department of Energy (DOE) is essential. The same is true in the Newly Independent States and central Europe, two other regions with long-term potential but which pose difficult challenges for U.S. exporters in the near term.

ADMINISTRATION'S ENVIRONMENTAL STRATEGIC PLAN

This Administration is deeply committed to the development of policies to protect the environment, promote economic growth and create high-skill, high-wage jobs. President Clinton recently cited the three principles that guide this Administration's environmental agenda:

"First, we believe a healthy economy and a healthy environment go hand in hand. Environmental problems result not from robust growth, but reckless growth. And we can grow the economy by making our people healthier, our communities more attractive, and our products and our services more environmentally conscious.

"Second, America must lead the way in promoting economic growth and environmental preservation at home and abroad.

"We live in an era of global economics, global environmentalism, global epidemics. Our lives and our livelihoods depend on people throughout the world being healthy and prosperous and respectful of the planet we all share. What is good for the world in this sense is very good for America; and

"Third, we must move beyond the false choices and unnecessary antagonism of the past. From American business and American labor to the world's wealthiest nations and the world's poorest, we all share a common interest in economic growth that preserves rather than pollutes our environment.

"America," the President said, "can set an example by achieving economic growth that can continue through the lifetimes of our children and grandchildren because it respects the resources that make that growth possible."

The President in his Earth Day speech directed Secretary Brown to spearhead an interagency strategic plan to improve the competitiveness and increase exports of U.S. environmental technologies. The Secretary of Commerce is also a member of the Council on Sustainable Development. The Department of Commerce through the International Trade Administration, National Oceanic and Atmospheric Administration, and the National Institute of Standards and Technology is ideally suited for this task. We are carrying out this directive energetically within Commerce and in partnership with the EPA, DOE, and the Export-Import Bank. We also are receiving strong support for this effort from the White House, especially Kathleen McGinty, Director of the Office of Environmental Policy and Dr. John H. Gibbons, Director of the Office of Science and Technology Policy. The Congressionally mandated Trade Promotion Coordinating Committee, chaired by Secretary Brown, will be the principal mechanism to oversee implementation of the strategic plan.

COMMERCE ENVIRONMENTAL TECHNOLOGY EXPORT PROMOTION

As a first step, the Secretary is integrating all of the Department's export promotion, technology commercialization, and science resources to carry out the President's vision. This strategic integration will build on activities already underway such as the National Environmental Technologies Trade Initiative (NETTI). A cornerstone of the NETTI is the development of a strong public/private partnership, coupling federal resources with private sector organizations whose expertise in the environmental arena is widely sought around the world.

As the lead player in implementing the Clinton Administration's Technology Plan, the Department is tasked with increasing the competitiveness of the environmental industry. Particularly important is the commercialization of new technologies. Two Commerce programs—Manufacturing Technology Centers and the State Technology Extension Program administered by the National Institute of Standards and Technology (NIST)—are instrumental in this effort.

The Manufacturing Technology Centers (MTCs) program has formed linkages with other federal agencies to provide services and assure coordination. We are working with EPA, the Department of Labor, the Small Business Administration (for loan guarantees), the Department of Energy and its major laboratories, and the Department of Defense and its laboratories and centers of excellence. The MTCs work directly with small firms, both on-site and in central demonstration facilities to improve their competitiveness and the number and quality of jobs they provide. This program can easily be adapted to incorporate elements of the Department's strategic environmental initiative. NIST has taken the approach of building on existing strengths and resources, coordinating carefully, and avoiding duplication of effort.

Another NIST effort, the State Technology Extension Program (STEP), helps states plan and develop industrial extension infrastructure. In addition to funding, the program provides technical assistance and organizes regional activities that help to coordinate various state-based activities. The STEP program has worked with a total of 34 states to date, counting both grant recipients and states which have participated in regionally based activities sponsored by STEP.

A logical extension of this program would be the use and interaction of STEP programs with the International Trade Administration's district offices to work together to educate and train small- to medium-sized companies on environmental technology opportunities overseas and to assist in deploying environmental technologies in a commercial environment.

Secretary Brown, in testimony before the Senate Commerce, Science and Transportation Committee and the House Science, Space, and Technology Committee on the proposed National Competitiveness Act, supported the idea of developing a "one-stop shopping" network of manufacturing extension centers to serve many of the 350,000 small- and medium-sized manufacturers. As I have said, many entrepreneurial firms in the environmental sector tend to fall in this category and would benefit from MTCs modified to include environmental technology centers.

The present NIST MTCs and STEP-supported activities have begun to build a base of experience helping small companies apply technological solutions to their needs for environmentally conscious manufacturing. Expansion of the MTC program

would greatly enhance the Administration's environmental initiative and. meet the needs specified in the National Environmental Trade Development Act of 1993.

The National Oceanic and Atmospheric Administration's (NOAA) research and monitoring programs also will contribute significantly to the President's environmental technologies export initiative. NOAA's Chief Scientist, Dr. Kathy Sullivan, combines a practical, hands-on approach with tremendous lab and theoretical skills. Her focus will be on facilitating the transition from groundbreaking research to practical application.

NOAA's scientific research demonstrates to foreign nations and corporations the existence of environmental problems by identifying the effects of their actions on Earth systems. NOAA's scientific programs demonstrate that these problems can be rationally addressed, thereby giving the confidence to proceed with sensible, cost-effective remediation and prevention programs. Further, NOAA's scientific capabilities provide the world with sophisticated tools for use in attaining sustainable development. As a result, NOAA helps generate a demand in foreign markets for U.S. environmental technology.

In response to the Department's new strategy to expand U.S. markets and exports by focusing on the development of innovative environmental technology, NOAA and NIST are presently developing collaborative projects as part of their FY95 budget initiatives that will form better linkages to and partnerships with private industries, both domestic and international. These projects will address already identified problems in environmental hazards mitigation such as wind engineering requirements and standards for new building design and the use of marine biotechnology in pollution remediation. In addition, the establishment of a standards and calibration facility for marine instrumentation exposed to often hazardous and destructive environments is being negotiated.

The International Trade Administration (ITA), as the principal Commerce agency responsible for export promotion, identifies opportunities for U.S. environmental technologies in existing and emerging foreign markets. We use a number of techniques to help U.S. industry capitalize on these opportunities. These include the more traditional market promotion techniques—trade missions, trade exhibitions, seminars/conferences—and combining technical/educational seminars with a business-to-business forum designed to match U.S. environmental technology suppliers with foreign customers.

The Department has organized, sponsored, and led more than thirty environmental trade events to Eastern Europe, Latin America, Southeast Asia, and the Pacific Rim. Participants were, for the most part, small- to medium-sized environmental companies where we have seen the greatest success in new jobs creation, technology innovation, and creativity. These firms tend to be more entrepreneurial and risk takers. Their CEOs are to be admired because of their willingness to compete with larger, more sophisticated Japanese and German companies who have access to resources far greater and support more deeply rooted than found in the United States. Elements of this bill would give these companies a helping hand, in a coordinated federal effort, to compete in a lucrative and risky global environment.

By integrating these three Commerce units, we will maximize our ability to aid the U.S. environmental industry. It is our hope that with this kind of federal assistance, U.S. environmental technology firms will be able to take advantage of emerging markets in the developing world and to build upon their comparative advantage in technological innovation.

FEDERAL EFFORTS TO PROMOTE ENVIRONMENTAL TECHNOLOGIES

As I have already noted, we believe, as does the President, that we can only succeed in our goal of expanding exports of environment technologies if there is an integrated effort across all agencies. Critical to this effort is the U.S. Environmental Protection Agency. In order to sell U.S. goods and services abroad, there must be markets and a demand for our products. Since many of most promising markets are in developing countries, a great deal of education and training is necessary. And, most importantly, we need to encourage these to countries adopt environmental standards that provide for a cleaner, healthier environment—and give U.S. firms sales opportunities. Other countries have been busy promoting standards that favor their own companies. EPA is essential to this effort—providing expert advice on technical assistance, regulatory enforcement, technology development and certification through its laboratories. Internationally, EPA assists in building the institutions necessary to implement a national environmental protection program.

Other federal agencies including the Export-Import Bank and the Overseas Private Investment Corporation administer various financial programs that are critical to sustaining an ambitious environmental initiative of the kind identified in your

bill. These agencies, along with the U.S. Agency for International Development and the Trade and Development Agency, are critical to developing the one-stop shop mentioned in the bill and providing the financial support to identify projects in foreign countries, complete the feasibility studies, and finance economically viable, environmental control and remediation projects.

ANALYSIS OF LEGISLATION

The broad goals of the bill to foster increased U.S. exports of environmental technologies are consistent with the President's policy and with the Department's ongoing efforts to refine interagency efforts to achieve his objectives. Mr. Chairman, the Department is in the process of formulating a long-range strategic plan for the environmental technology exports at the direction of the President and we expect to have the plan ready by the end of September. You can be certain that our strategic planning process will carefully consider each of the initiatives included in S. 1074. It is important to emphasize that our purpose is the same as yours—to take advantage of the enormous global market opportunities by expanding U.S. environmental industry exports.

We would prefer to develop our strategic plan and consult with industry closely before determining what specific new assistance programs we should undertake. We agree with you, Mr. Chairman, that industry must play an important role in developing an appropriate strategy to assist environmental companies in foreign markets. We believe, however, that industry should be consulted before any program is determined and that all needs be examined and weighed in light of their importance to helping U.S. industry succeed against its competition. We must find markets in which we excel, such as geographic information systems, bioremediation, and newly developed industrial waste water treatment systems that use waste heat, and apply our combined resources (government and industry) to accomplish our goals.

The bill also requires the President to establish an Environmental Trade Promotion Council. As you know, we are now implementing creation of the Congressionally mandated Trade Promotion Coordinating Committee environment working group, which seems to us to serve a similar function. Further, in light of the President's goal of reducing the number of advisory committees, the Administration does not support the creation of a new committee. We, of course, agree that industry participation is essential to formulating any sound, long-term strategic plan to assist the environmental sector and are committed to encouraging their participation.

In conclusion, Mr. Chairman, I wish to thank you for the opportunity to share with you the Department's views on the National Environmental Trade Development Act of 1993 and applaud your efforts to carry out the President's commitment to fostering the growth of U.S. environmental technology exports. We are encouraged by your legislation and believe it sends a helpful signal. I look forward to working closely with you to accomplish the Administration's goal to protect the environment, promote economic growth and create high-skill, high-wage jobs. Thank you.

Senator KERRY. Thank you very much, Mr. Sallet.

Mr. Ekstrom.

STATEMENT OF JIM EKSTROM, ACTING CHIEF OF INTERNATIONAL OPERATIONS, THE PEACE CORPS

Mr. EKSTROM. Thank you, Mr. Chairman. It is a pleasure to appear before you today to share the views of the Peace Corps with respect to the provisions contained in Senate 1074, which would establish a senior level Environmental Service Corps within the Peace Corps.

The goal of the Peace Corps provision in the proposed legislation is to provide experienced environmental professionals to assist developing countries and emerging democracies in planning and implementing environmentally sound sustainable development programs. That is a goal that we wholeheartedly support. Indeed, it is already an important part of the Peace Corps mission. For this reason, we do not believe that it is necessary, nor do we support the creation of a separate specific division in the Peace Corps to accomplish this goal.

This year we will field close to 800 environmental volunteers in nearly 60 countries. That represents one of the largest environmental workforces of any international development organization.

Senator KERRY. How many people was that?

Mr. EKSTROM. 800, sir.

I am aware, Mr. Chairman, that 36 of these volunteers, of these environmental volunteers, come from your State, and that is more than any other State, with the exception of California and New York. As you know, our volunteer recruitment is driven by the needs and the requests of our host countries. It has long been the Peace Corps view that effective, sustainable development programs cannot be imposed from the outside that must evolve in response to problems identified by the countries, themselves.

I am pleased to report to you that as the international community has grown increasingly aware of the vital link between sustainable development and environmental protection we have experienced a dramatic increase in requests for environmental volunteers. Our environmental sector has grown from fewer than 300 volunteers in 1986 to a projected high of just over 1,000 in 1995. The Peace Corps has carefully targeted its recruitment efforts to allow us to meet the increased demand for these types of volunteers.

Our programming in the environmental sector, as in all other sectors, is built on the principle that sustainable development begins at the grassroots level and builds up. It has been our experience that direct people to people assistance at the local level is the most effective form of development assistance, and that is why the majority of our environmental volunteers concentrate on smaller scale community projects.

We have also learned through experience that a long-term commitment, good language skills, and an understanding of cultural issues are often as important in the development process as technical competence or the technology, itself. If a project is to be sustainable over time, local people must be involved in every aspect of project planning and implementation. Because it takes time to build strong relationships with local communities, we ask our volunteers to make a 2-year commitment and to live among people with whom they work. The closer the advisors are to the people, the greater the chance for sustainable change.

In laying out the agency's approach to recruitment and programming, I want to stress to the subcommittee that Peace Corps has room not only for the young volunteer with a B.A. in environmental studies, but also for the Ph.D. with a degree in environmental toxicology. We have field requests for environmental generalists, if you will, to work with farmers on environmentally sound soil conservation practices, but we have also field requests like those received recently from Chile for 10 Spanish speaking forestry experts to work with Chilean universities as teachers and researchers.

Peace Corps has volunteers working in isolated villages, but we also have volunteers working at the ministry level in capital cities. Traditionally, our host countries have requested environmental volunteers in five areas. Those areas are forests, forestry expansion—extension, excuse me—forest management, environmental edu-

cation, national parks, biological diversity, and wildlife management.

Forestry volunteers are involved in a variety of projects, including forest management programs with host country forestry agencies. In come cases, forestry volunteers are teaching at universities and in technical colleges.

Environmental education volunteers are engaged in teacher training and curriculum development and development of media campaigns and other programs to promote natural resources conservation at the local and regional levels. Peace Corps volunteers assigned to national park and biodiversity projects work with their host country counterparts to identify potential reserve locations, survey and mark protected area boundaries, and prepare tourism and general management plans.

Wildlife management volunteers and their host country counterparts work to protect threatened and endangered species and promote sustainable wildlife activities that provide food and income to local communities. While a great deal of work remains to be done on these more traditional environmental programs, urbanization in the developing world is presenting an increasingly severe environmental challenge from many of our host countries. In response to requests for technical assistance in urban areas, Peace Corps has initiated projects dealing with pollution in solid waste management.

Peace Corps environmental programs, both traditional projects and new initiatives, are underway in all four regions in which the Peace Corps serves. And some of our volunteers have targeted 300 villages for tree planting, promotion of environmentally sound cookstoves, and environmental education in schools and rural communities.

Volunteers in Sri Lanka are teaming up with that country's department of wildlife conservation to develop environmental education materials for use in primary and secondary schools. The volunteers in Costa Rica are concentrating on forestry projects aimed at increasing reforestation by 150,000 acres and training 25,000 farmers in reforestation in the next 5 years.

Shortly after the collapse of the Soviet bloc, Peace Corps was invited into Eastern Europe, a region suffering from severe environmental degradation. We have begun environmental education and environmental management programs in Poland and Hungary, as well as in the Czech and Slovak republics, and plan to launch similar efforts in Russia and the newly independent States when resources permit.

Mr. Chairman, Vice President Gore spoke to the United Nations Conference on Environment and Development in Rio de Janeiro last summer. He said it is time for us to be as concerned about the road from Rio as we have been with the road to Rio. With the continued support of Congress and the American people, and working side by side with our global partners, the Peace Corps will help build that road from Rio.

Thank you, very much.

[The prepared statement of Mr. Ekstrom follows:]

PREPARED STATEMENT OF JAMES EKSTROM

It is a pleasure to appear before you today to share with the Subcommittee Peace Corps' views on the provision in the National Environmental Trade Development Act of 1993, S. 1074, which would establish a senior-level environmental- service corps within Peace Corps. We are grateful for the support you have given to Peace Corps as a member of the Foreign Relations Committee, and appreciate your interest in our environmental work.

The goal of the Peace Corps provision in your bill is to provide experienced environmental professionals to assist developing countries and emerging democracies plan and implement environmentally sound sustainable development programs. That's a goal we wholeheartedly embrace. Indeed, it is already an important pare of Peace Corps' mission. We therefore do not believe it is necessary—and so do not support—the creation of a specific division within Peace Corps to accomplish the goal.

In Fiscal Year 1993, we will field close to 800 environmental Volunteers in nearly sixty countries—that's one of the largest environmental work forces of any international development organization. I would note Mr. Chairman, that 36 environmental Volunteers come from Massachusetts—that's more than any other state but California and New York.

Peace Corps' Volunteer recruitment is driven by the needs and requests of our host countries. It has long been the Agency's view that effective development programs—programs that will be sustained over the long haul—cannot be imposed from above or outside, but must evolve in response to problems identified by the countries themselves.

I am pleased to report that as the international community has grown increasingly aware of the vital link between sustainable development and global protection, we have experienced a dramatic increase in requests for environmental Volunteers. Our environmental sector has grown from fewer than 300 Volunteers in 1986 to a projected high of just over 1000 in 1995. Peace Corps' carefully targeted recruitment system has allowed us to meet the increased demand for environmental Volunteers, and we look forward to breaking that 1000 mark in 1995 if resources permit.

Our programming in the environmental sector, as in all other sectors, is built on the principle that sustainable development begins at the grass roots level and builds up. It has been our experience that direct, people-to-people assistance at the local level is the most effective form of aid. Our best programs are those that have been initiated at the community level. That's why the majority of our environmental volunteers concentrate on smaller scale, community projects.

We have also learned through experience that long-term commitment, good language skills and cross cultural understanding are often as important in the development process as technical competence or the technology itself. If a project is to take hold and flourish, if it is to have a life beyond the tour of the technical advisor and be sustainable over time, then the local people must be involved in every aspect of project planning and implementation.

Because strong relationships with local communities are the key to success, Peace Corps has put great emphasis on language and culture in our training programs. And because it takes time to build these relationships, we ask our Volunteers to make a two-year commitment and live among the people they serve. The closer the advisers are to the people, the greater the chance for sustainable change.

In laying out the Agency's approach to recruitment and programming, I want to stress to the Subcommittee that Peace Corps has room not only for the young Volunteer with a BA in environmental studies but also for the Ph.D. with a degree in environmental toxicology. We have filled requests for environmental "generalists", if you will, to work with farmers on environmentally sound soil conservation practices and we have filled requests like that from Chile for ten Spanish speaking forestry experts to work with Chilean universities as teachers and researchers. Peace Corps has Volunteers working in isolated villages and we have Volunteers working in ministries in capital cities.

Traditionally, our host countries have requested environment Volunteers in five areas: Forestry Extension, Forest Management, Environmental Education, National Parks-Biological Diversity, and Wildlife Management.

Forestry extension Volunteers are involved in a variety of projects including tree nursery development and management, fruit tree Page Three

planting, watershed management and agroforestry promotion projects. Volunteers assigned to forest management programs work in host country forestry agencies with forest wardens and rangers, timber-harvest supervisors, silviculturists, forest fire suppression teams and forest pest researchers to promote sustainable forest

management projects. In some cases, Volunteers are teaching at national and regional universities and technical colleges.

Environmental Education is Peace Corps' fastest growing environmental program and a critical component of all our environmental activities. Volunteers participate in both formal and non-formal education activities such as teacher training, curriculum development, and development of media campaigns and other programs to promote natural resource conservation at local and regional levels.

Let me point out, too, that environmental education is not the sole purview of our environmental Volunteers. In the last few years, Peace Corps' science, math and English teachers have begun to work with their host country counterparts to incorporate environmental issues into their curricula. In Botswana, Gabon, Malawi, Tonga, Western Somoa, Fiji, the Eastern Caribbean and Central Europe, more than 200 Volunteers and host country teachers participated in training workshops to enhance environmental education in the classroom and improve instructional techniques. Participants were given state of the art environmental education materials and taught techniques to adapt these materials to their countries and grade levels.

Just as our host countries have begun to emphasize environmental education at every academic level, many have also taken serious strides to protect and support their national parks and slow the loss of biodiversity. Peace Corps Volunteers, working with their host country counterparts, have been helpful in identifying potential reserve locations, surveying and marking protected area boundaries, conducting flora and fauna surveys, training natural history interpreters, establishing visitor centers and museums and preparing tourism and general management plans.

To complement the work being done with national parks and biodiversity, Peace Corps' Wildlife Management Volunteers work with their counterparts on biological inventories, species studies and habitat recovery and management plans. Their projects support host country efforts to protect threatened and endangered species and promote sustainable wildlife activities that provide food and income to local communities.

While a great deal of work remains to be done in these more traditional environmental programs, urbanization in the developing world is presenting an increasingly severe environmental challenge for many of our host countries. In response to requests for technical assistance in urban areas, Peace Corps has initiated projects dealing with pollution and solid waste management.

Peace Corps' environment programs—both traditional projects and new initiatives—are underway in all four regions in which Volunteers serve. In Senegal, Volunteers have targeted 300 villages for tree planting, promotion of environmentally sound cookstoves and environmental education in schools and rural communities. Volunteers in Sri Lanka are teaming up with that country's Department of Wildlife Conservation to develop environmental education materials for primary and secondary schools, while Volunteers in Costa Rica are concentrating on a forestry project aimed at increasing reforestation by 150,000 acres and training 25,000 farmers in reforestation by the end of FY 97.

Shortly after the collapse of the Soviet bloc, Peace Corps was invited into Eastern Europe, a region suffering from severe environmental degradation. We have begun environmental education and environmental management programs in Poland, Hungary and the Czech and Slovak Republics and plan to launch similar initiatives in Russia and the Newly Independent States when resources permit.

Mr. Chairman, it will take tremendous energy, drive and commitment on the part of every member of the international community to pass on a safer, healthier world to our children. When Vice President Gore spoke to the United Nations Conference on Environment and Development in Rio de Janeiro last summer he said, "It is time for us to be as concerned about the road from Rio as we have been with the road to Rio." With the continued support of Congress and the American people, and working side by side with our global partners, Peace Corps will help build that road from Rio.

Senator KERRY. Thank you very much, Mr. Ekstrom.

Mr. Connors.

STATEMENT OF DONALD CONNORS, CHAIRMAN, THE ENVIRONMENTAL BUSINESS COUNCIL

Mr. CONNORS. Mr. Chairman, Donald Connors, the founding chairman of the Environmental Business Council and president of the Environmental Business Council of the United States, and on behalf of these organizations I wish to endorse and enthusiastically

support the legislation before us today, Senate 1074, which has in the House of Representatives a companion bill, House of Representatives 2112.

We think that the legislation as proposed offers an extraordinary and appropriate response of the U.S. Government and the private sector to work together to create a collaboration toward a strategy to connect the environmental industry resource of the United States to a very important issue, the environment of the planet and the servicing of the global market that will grow rapidly in the years ahead.

Now, there are various estimates of the size of the global market. Some say it is a $200 billion market and by the year 2000 it will be a $300 or $400 billion market. Mr. Chairman, those estimates, I think, grossly understate the size and potential growth of this market. And I say they understate it because there are in force now, and there will increasingly come to play, market drivers that will expand this market well beyond our expectations, and those market drivers are, in part, fueled by business organizations.

We know the multilateral corporations are paying a lot of attention to environmental issues, but national organizations and operating companies in nations around the world are increasingly focusing on the issues of potential liability and the cost of waste. Waste is an economic negative. And as these corporations and other operating enterprises focus on tl:ese issues, there will be an increased demand for good environmental management, and that demand creates the opportunity for the sale of environmental technology, environmental products, and environmental services. This then is the private, business-oriented market driver. But the public is also increasingly aware, globally, of the threats to the quality of life through environmental irresponsible behavior, whether it is on the part of the public or the private sector. Such public concerns are being translated into new laws, new regulations, and as a market driver those new laws and regulations further increase the demand for good environmental management and, of course, greater opportunities for the sale of goods and services.

And finally, the major driver, I believe, as my colleague from the Peace Corps referred to, the Vice President's comment, the roads from Rio are as important as the roads that got us to Rio, the Earth Summit. You Mr. Chairman attended, as did I and our president, now chairman of the EBC Jack Driscoll. The Earth Summit led to the adoption of agenda 21 and led to the creation of a new international instrumentality, the Sustainable Development Commission, organized and directed by the United Nations.

That organization and increasing concerns of governments around the world for good environmental management will lead to new rules and new opportunities for environmental goods and services. And the industry in the United States is one of the world's great resources for environmental technology, environmental goods, and environmental services, but there are barriers to the exploitation of its competence.

First a bit about the industry. There are perhaps 60,000 environmental companies in the United States, and in my testimony which you will include, I hope, Mr. Chairman, for the record, you will see a chart that illustrates the geographic dispersion of the environ-

mental industry. It is located in various clusters, in the Northeast and Southeast and around the gulf coast, the Northwest, and California, and in the central part of America. That is consistent with the research of Prof. Michael Porter from Harvard Business School who has engaged in the important research on the economic competitiveness of nations.

This clustering of the industry around various parts of the country is the underlying reason why your proposal for the establishment of regional environmental centers is so apt and appropriate a strategy. It is very important for companies to be able to meet and talk with each other, to learn what each other offers in the way of technology or products, and to be connected to the academic institutions out of which grow some of the great research and great new ideas which can only be commercialized by the private sector.

So, the purpose of the regional centers is to assure that there is a continuing, sustained, long-term relationship between a private industry trade association such as the Environmental Business Council or the Oregon Environmental Technology Association or similar organizations that are just now forming around the country, the Government, and the academic institutions. And it is that partnership if we can shape it not at the national level toward a national environmental industry/government strategy. We will have a materially enhanced opportunity to connect the U.S. environmental industry to the expanding global market for environmental goods and services.

And as you said at the outset of the hearing, Mr. Chairman, in that excellent opening remarks, the benefits to the strategy proposed in Senate 1074 are the job creation opportunities and economic development opportunities that are only available through a coordinated strategy involving the industry and Government. But it is also an activity and an initiative in service of the needs of the human environment and the planet.

As you, Mr. Chairman, and I and others who attended the Earth Summit are aware, the global environmental problem is an exceedingly serious one. As it is going to get worse as time goes on, I say we have not only an economic development imperative to connect our industry to those needs, but we really have a moral imperative.

The world needs this resource, and we think that it is an important activity and developing a coordinated, well-thought-out, program, a strategic plan in which the private sector, as you propose in the legislation, is actively involved in first-rate planning. Now underway as a result of the President's Earth Day speech is a first initiative with the Commerce Department taking the lead, and other appropriate agencies set forth in the legislation, are studying how we will be successful in connecting this industry to the global market.

And what we propose is a really new form of partnership between the Federal Government, the industry, and the States. And the States' participation is largely leveraged through the regional centers, in those places where the industries are geographically most concentrated. Environmental industry associations are just now being organized around the country.

We think it is appropriate that the Department of Commerce take the lead in the development of these programs, as you pro-

pose, and we are delighted with what the Department has been doing since Secretary Brown and especially Jonathan Sallet have come on board. We are really pleased by the progress we see there. It is marvelous to see the various Federal agencies having a role in this, meeting on a regular basis to bring together the various strands and activities in export promotion so that we can create a harmonized program. And we hope the industry will be as active and involved in the development of the strategy over the long term as they are inside the Federal agencies.

A final thought, Mr. Chairman. As you know, I have an enormous commitment to this subject. I think it is a terribly important thing for us in America to bring together the pieces of this industry, which is so fragmented, both sectorially and geographically. But I think among the elements that are the most important is the capacity building. We have undergone great learning in the United States in the last quarter century that I have been engaged as a professional in this field. We know things and we have experienced environmental management. And through several devices—the activities that will grow out of the strategic plan, but in particular, ensure that not only the Commerce Department, but the Energy Department and the EPA that have special roles to play in providing information transfer and technical information to people, States, and organizations around the world. That is critically important. But your proposal for the experienced Environmental Professional Service Corps, I think, is an extraordinarily important element of that capacity building program.

As you know, my son and daughter-in-law are Peace Corps volunteers. They are finishing up their third year of service on the shore in Africa, and it happens that my son is an environmental person in developing water supply to villages and wastewater treatment facilities, meaning pit latrines.

The kind of volunteer service that we think nations and industry around the world would welcome is not at the village level, Mr. Chairman. It is at the Nation, the State, the region, the public or private industry organization, or nongovernmental organization, where the skills and experience we have developed in this extraordinary professional learning that we have developed in the past 25 years, can be usefully deployed. I think there are a lot of environmental professionals who would be happy to serve in the Peace Corps as volunteers. But as the advisor to a State Government or to a major metropolitan area in other words at a much higher level of policy formulation and policy implementation than is usual with such volunteers to this time. It is that need which this legislation, as you have drafted it, is addressed.

I wholly applaud all of the work that the Peace Corps is doing. I cannot think of an organization for which I have much more respect. And my son and daughter-in-law love it. They are happy to have had this terrific opportunity to serve. We need to focus on how to help these nations that want to do the work, but at a much higher level, and perhaps the Peace Corps can help us shape with you some proposals that will accomplish that result.

I want to thank you finally, Mr. Chairman, for your continued support for the environmental industry, the association of technology companies, products, and services firms, and academic insti-

tutions that we formed a couple of years ago in Massachusetts. You have been and your staff has been so supportive of our activities. Thank you also for the—what people have said and I say also, the brilliant opening speech you gave at our Environmental Industry Summit meeting in early June here in Washington.

I think your leadership is absolutely critical. You understand how important this is, and we want to work with you over the long term to achieve these results.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Connors follows:]

PREPARED STATEMENT OF DONALD L. CONNORS

Thank you, Mr. Chairman, and members of the Subcommittee, for inviting me and the Environmental Business Council of the United States, Inc. (EBC) to testify on S. 1074, the "National Environmental Trade Development Act of 1993." This legislation will enable federal and state governments, private industry, universities, and public organizations to cooperate to increase the export of U.S. environmental technologies, products, and services and to improve the world's capacity to manage its resources for sustainable use. I believe that we have tremendous opportunities to create good jobs in the U.S. envirotech industry and to help other nations to better manage their resources through the export of environmental products and services. I particularly want to thank you, Senator Kerry, for participating in the Summit Meeting of the Environmental Business Council of the United States, Inc., which we held earlier this month here in Washington, D.C. As you know, we were able to launch the national EBC at this meeting, which was attended by Ron Brown, the Secretary of Commerce, Carol Browner, the EPA Administrator, Representative Studds, Presidents and Chief Executive Officers of U.S. envirotech companies from around the country, and many others in the public and private sectors. We are encouraged by the success of the Summit Meeting that, as Administrator Browner put it, the national EBC is an idea whose time has come.

My testimony today will focus almost exclusively upon S. 1074, the "National Environmental Trade Development Act of 1993 ", introduced by Chairman Kerry, Senator's Chafee, Lieberman and Baucus on May 28, 1993. I have also attached to my written testimony an updated version of the strategy document, "A Strategy to Promote and Provide Leadership for the U.S. Environmental Industry in the Domestic and Global Marketplace" we have produced in connection with the establishment of the national Environmental Business Council, and I ask that it be made a part of the record of this hearing.

PUBLIC-PRIVATE SECTOR COOPERATION IN DEVELOPING ENVIRONMENTAL EXPORTS

EBC strongly supports the goals embodied in S. 1074, the companion bill to H.R. 2112. As members of an organization (EBC) which seeks to take maximum advantage in the growing global market of the hard-won technological and managerial experience of the U.S. envirotech industry, we understand the need for greater cooperation and coordination between the industry and the government to achieve this goal. One of the important accomplishments of S. 1074 is that it will, for the first time, permit an active, full partnership between the government and the private sector in carrying out the policy to develop the export of U.S. envirotech products and services (S. 1074, Section 6).

I understand and applaud the efforts by the Congress that were made in the Export Enhancement Act of 1992 to create a special working group of federal officials to coordinate the actions of federal agencies to promote the export of environmental goods and services. This working group on environmental exports would function as a subgroup of the Trade Promotion Coordinating Committee which seeks to coordinate the actions of a dozen or so federal agencies with interests in export development across the board. I do not believe, however, that this subgroup is organized and functioning at this time.

But, despite the substantial improvements made by the Export Enhancement Act in U.S. trade policy, participation by the private sector in devising and maintaining an effective environmental trade development policy is not authorized by the Export Enhancement Act. S. 1074 effectively fills in this gap left by the Export Enhancement Act by establishing the Environmental Trade Promotion Council which will be composed of the Secretaries of Commerce and Energy, the Administrator of the Environmental Protection Agency, the Administrator of the Agency for International

Development, the Director of the Trade and Development Agency, the President of the Export-Import Bank, the President of the Overseas Private Investment Corporation, and 12 non-federal members appointed by the President representing the envirotech industry, public organizations, and the states.

We strongly believe that inclusion of the private sector in the Environmental Trade Promotion Council will ensure that the primary goal of the Council to prepare an action plan to develop the export of environmental products and services will be met. Furthermore, the participation and oversight by private sector and other non-federal members of the Council will give the federal agencies significant and timely information and feedback on the success of federal initiatives to develop environmental exports—feedback that is not available to them under the current law in a timely manner and which we believe is essential to a successful environmental products and services export strategy.

I want to stress that S. 1074 does not provide merely a consultative role for the private sector in devising and maintaining a program to promote the export of U.S. environmental products and services. S. 1074 involves the industry fundamentally in a close partnership with the federal government to achieve its goals. To this degree, S. 1074 may be said to open new ground in relations between the industry and federal agencies, and may be looked upon as a test case. We believe that we can make substantial improvements in the way the federal government currently conducts its programs to promote both economic development and responsible environmental management, by involving the private sector in export and environmental management decision making as a working partner. We fully recognize that this change requires the industry to act cooperatively with government and to assume a new role and new responsibilities as well. This we are prepared to do.

We also believe that Section 6 of S. 1074, which authorizes the Environmental Trade Promotion Council, is entirely consistent with the new policy of the Clinton-Gore Administration, as indicated by the President's Earth Day Address (April 21, 1993), in which he specifically identified the development of the export of U.S. environmental products and services as a major goal of his Administration. President Clinton clearly understands the linkage between the economic growth potential of promoting environmental exports and improvements in the capacity of nations to manage their resources and environment. In the view of this Administration, the United States and other nations can have both jobs and a healthy, sustainable environment. The President's decision that the Departments of Commerce and Energy and the EPA take the lead in this effort is in accord with the provisions of S. 1074, and I call your attention to Sections 4 and S of the Bill, that, in addition to Section 6, place these agencies at the center of U.S. environmental trade promotion activities. Section 4 provides for a coordinating role for the White House Office of Environmental Policy and the National Economic Council to ensure that the environmental business action plan developed by the Environmental Trade Promotion Council is implemented by federal agencies. Section 5 clarifies the central role played by the Department of Commerce in implementing this action plan.

REGIONAL ENVIRONMENTAL BUSINESS AND TECHNOLOGY COOPERATION CENTERS

Section 7 of S. 1074 also authorizes the establishment of up to six regional environmental business and technology centers around the country. These centers, which will be initially supported, in part, by fifty percent federal matching funds, for a period of up to five years, will be a principal mechanism to coordinate the activities of regional envirotech industry, universities, and state agencies in programs to assist and train foreign companies, government officials, and staff in the use of U.S. environmental technologies, products, and services. The principal beneficiaries of the work conducted by the regional centers will be small and mid-sized environmental businesses and industry engaging in export of their products, goods, and services, often for the first time. We believe that, as these centers demonstrate their value, support for them should come from industry and other consumers of their services. Federal funding will cease after five years. Even during the five years of federal support, fifty percent of the funding to operate the centers must come from non4ederal sources.

The centers should not be regarded as duplicating the services of federal agencies. It is clear, for example, that the centers will be able to sustain an integrated program of activities aimed at target countries and areas of the world in order to: (1) develop the export of U.S. environmental products and services, and (2) improve the capacity of developing nations for environmental management. This kind of sustained effort and focus is not possible under current federal programs, we believe.

Regional centers may assist in the identification of country or area needs for environmental technologies, goods, and services. They may provide technical assistance

to small and mid-sized businesses within a region of the U.S. to meet these identified needs. They may, through a wide range of activities, including meetings, conferences, exchanges, and programs of technical training, establish long-term business, professional, and governmental relationships between foreign and U.S. companies, governmental officials, trade associations, universities, and research centers. The net result, we believe, will be the creation of substantial opportunities for the development of the export of U.S. environmental products and services over the long term.

I stress that the centers will be able to target countries and areas of opportunity and to devise integrated programs of assistance and training, with the full participation by the private sector in its programs. Finally, these centers will either provide their worth over the five year period they are authorized and be entirely supported with non-federal funds, or they will not survive. But, we think that S. 1074 wisely provides for an initial period of federal support for these regional centers to demonstrate their value.

THE SENIOR ENVIRONMENTAL SERVICE CORPS

The Senior Environmental Services Corps is a proposal whose time has come, in my opinion. We have more than two decades of experience in developing environmental technologies and managing resources in the United States. We have made many mistakes, of course, and clearly we cannot claim that we have solved even our major environmental problems. But, we have also had many successes and we have learned much about environmental management. This knowledge should be made available to other nations.

We also have a corps of environmental specialists and managers who are highly trained and who are motivated by the spirit of altruism to serve humankind. I believe that we must simply provide the means for such individuals to serve in other countries, much like Peace Corps has done for the past thirty years.

The Senior Environmental Service Corps, however, is different from the typical Peace Corps program, in that the service and assistance would be provided at higher levels of government and business than is usually the case in Peace Corps programs. The rationale and need for this level of service is primarily to affect the formation of environmental policy and programs by providing highly experienced environmental professionals to assist government ministries, business, and public organizations in creating new programs of environmental and resource management.

Our assumption in supporting this new program within the Peace Corps is that the United States, after more than two decades of sustained environmental management, has created a large group of professionals, in the private sector as well as in government and public organizations, who will be willing to devote a substantial period of service abroad in order to improve national programs of environmental management.

The modest costs of this program will, in my opinion, be substantially returned through the service that dedicated environmental professionals will provide to their host countries, companies, and organizations. I strongly urge you to support the creation of the Senior Environmental Service Corps.

That concludes my testimony with respect to S. 1074, Mr. Chairman. I will be happy to answer to provide additional information and to respond to your questions.

["A Strategy To Promote and Provide Leadership for the U.S. Environmental Industry in the Domestic and Global Marketplace," by Donald L. Connors, President; Jack Archer, Legislative Policy Advisor; and Michael D. Bliss, Environmental Policy Advisor of the Environmental Business Council of the United States, Inc., may be found in the committee's files.]

Senator KERRY. Thank you very much, Mr. Connors, particularly for your last comment. I appreciate it. [Laughter.]

I am very appreciative for your leadership. You have really been out there and doing it, in a practical way which has been so helpful in breaking ground for companies to recognize that this is not goo goo talk and it is not just do-gooders in Washington. It is real. It is jobs. It is money. It is bottom line. And I think you have been a visionary on that level, and I thank you for it.

Mr. Snape.

STATEMENT OF WILLIAM J. SNAPE, ASSOCIATE COUNSEL FOR WILDLIFE POLICY, DEFENDERS OF WILDLIFE

Mr. SNAPE. Thank you, Mr. Chairman. And thank you for the opportunity to address the subcommittee this morning on a bill that could simultaneously help the environment and create American jobs, not a shabby combination at all. I hope my full testimony can be included in the record.

Senator KERRY. Without objection it will be, and also the documents Mr. Connors wanted will be placed in the record.

Mr. SNAPE. The simple fact that a Defenders of Wildlife representative sits here today to brief the subcommittee on environmental technical exports shows how far the dialog on trade in the environment has come. No longer can we work at these two disciplines separately. The connection is inextricable, whether we are talking about the Convention on International Trade and Endangered Species, Dolphins in the Eastern Tropical Pacific Ocean, or perhaps most importantly, NAFTA trade sanctions for lax domestic enforcement of environmental laws.

Because the interconnection between trade and the environment is so crucial and deep, it is vital that the Federal Government develop short- and long-term strategic plans, and certainly, what Mr. Sallet said this morning is a very good start.

The bill at issue today, Senate bill 1074, is an important cog in this trading environment policy wheel. If the United States is to ever develop a coherent policy on trade in the environment, and we are not quite there yet, to be perfectly honest, there will need to be the same type of public-private cooperation in communication mechanisms that exist in 1074.

Defenders' interest in environmental exports was peaked by the policy opportunity to link such exports with enforcement regimes being discussed in the NAFTA environmental supplemental negotiations. In plain terms, as Mr. Connors laid out, the demand for U.S. environmental goods and services can be triggered by strict enforcement mechanisms.

International trade agreements are excellent devices for such strict enforcement mechanisms. Very often, the underlying cause for noncompliance with environmental standards, particularly in countries like Mexico and other lesser developed countries, is technological incapacity or management deficiency.

We decided to propose a consultative mechanism with the Environmental Business Council that could first identify technical inability, and then charge a public-private task force with crafting result-oriented solutions. Under our plan, which we did submit to Ambassador Kantor, if the noncomplying industry or sector in question did not abide by the task force recommendations, its government would be subject to possible trade sanctions. This is still under the NAFTA environmental supplement regime.

With this mechanism we hope to create a lucrative carrot and a powerful stick, a copy of the original Defenders' EDC proposal is attached to my testimony. Unfortunately, USTR has not yet formally incorporated the technical approach in its proposed NAFTA enforcement regime. Perhaps now that Mexico and Canada have temporarily at the idea of trade sanctions, inclusion of a more cooperative mechanism might persuade our potential NAFTA partners

that the U.S. request for sanctions is really only a safety net and not a modus operandi.

In order to accommodate the most frequent U.S. NAFTA enforcement proposal I have modified the original Defender's EBC proposal, and that, again, is in my full testimony.

Furthermore, and perhaps even more important, with the Clinton's administration's goal of concluding the Uruguay Round of GATT a possible GATT green round subsequently, there will be opportunities to link U.S. environmental exports to global trade. Although the enforcement schemes now being considered by the NAFTA parties seem unlikely in the much larger GATT context, there is, nonetheless, a very strong movement to more fully reflect environmental costs in our world trading rules. For example, nonenforcement of environmental laws or the lack of sound laws themselves could be classified as either subsidies or dumping under GATT, triggering allowable retaliatory trade measures.

Given my comments so far, it is obvious that I recommend a greater role for USTR in the Trade Promotion Council in your bill. In particular, a USTR seat at the proposed council seems necessary, given the agency's involvement in developing trade policy and negotiating trade treaties. I will also recommend that the Department of the Interior because of its expertise in conservation services, and the Department of Treasury because of its multilateral developing bank lending authority, be added to the council.

In addition, the Department with its technological expertise also ought to be considered for participation in the council. I guess, to make a long story short, I personally see this as a very large Federal cooperative effort that should take into account the expertise of all applicable agencies.

In addition, the Office of Management and Budget—OMB—should be asked to revise the standard industrial codes to explicitly provide for tracking sales in environmental technologies. We still do not really have firm export numbers in the area of environmental exports.

Although the politics of trade agreements often cloud the substance of gains made possible by them, I truly believe that momentous change is gripping the way the United States looks at international trading relationships. While we should acknowledge that liberalized trade can benefit sustainable and prosperous development, we cannot allow the mantra of free trade to trump all other values.

Rather, on this ever-shrinking planet, we must advance new economic policies that support, not threaten, the precious natural resources that you alluded to in your opening remarks, and that we have all inherited. Senate bill 1074 is an excellent step in that direction.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Snape follows:]

PREPARED STATEMENT OF WILLIAM J. SNAPE III

Mr. Chairman, my name is William Snape, Associate Counsel for Defenders of Wildlife (Defenders). Defenders is a non-profit advocacy group that concentrates its efforts upon combating species extinction and the overall loss of biological diversity. I am pleased to offer my thoughts and overall support for the National Environmental Trade Development Act of 1993 (NETDA) on behalf of Defenders and our

80,000 members. I also request that this testimony and its appendices be printed in their entirety for the record.

Defenders involvement in issues relating to international trade largely parallels the growth of the now adolescent "trade and the environment" discipline. At first, Defenders focused primarily on trade in wildlife and wildlife parts under CITES, work which continues to this day. Since the infamous tuna/ dolphin GATT panel decision of August 1991, Defenders has begun extensive examination of global multilateral trade agreements like GATT, and regional pacts such as NAFTA, so that trade liberalization for goods and services does not occur unsustainably and so that the agreements themselves do not challenge legitimate environmental and conservation standards as illegal trade barriers. Just recently, largely from our efforts in helping shape the NAFTA environmental supplement called for by President Clinton, Defenders has worked on advancing the positive environ-mental aspects of international trade. Through all these efforts, Defenders has realized the permanent link between trade policy and sustainable growth. NETDA represents an important cog in this policy wheel.

My testimony today will focus on two main topics:

a) NETDA's relationship to international trade agreements like NAFTA and GATT, as well as the OECD; and

b) arguments in favor of including the Department of the Interior, the U.S. Trade Representative's Office, the Department of Treasury, and perhaps even the Department of Defense in the Environmental Trade Promotion Council established by NETDA. Such inclusion is consistent with Defenders' vision of the ideal trade/environment interagency process.

In order for the U.S. to develop a coherent policy on trade and the environment, all affected governmental agencies and the public must be given the opportunity to assess the legal substance of trade agreements, as well as participate in promoting American environmental export capabilities. In fact, perhaps the most appealing aspect of NETDA is the openness it commands in developing environmental export policy. Defenders hopes that equally democratic means are utilized by the Clinton Administration in developing its trade agenda. So far, signs are promising, but the Administration does not yet have its trade/environment team fully in place. For example, the OECD's Trade and the Environment Working Group is meeting next week in Paris, but the U.S. still does not have any clear substantive policy on many issues. For any policy that is set, one cannot overemphasize the danger of creating any trading structure that is not accountable to interested citizens.

EXHORTS UNDER NAFTA AND GATT

As President Clinton has stated, "Our exports are especially important to us. As bad as the recent recession was, it would have gone on for twice as long had it not been for what we were able to sell to other nations * * * our policies must protect our environment, promote economic growth, and provide millions of new high-skill, high-wage jobs." So long as a broad range of U.S. sectors, small and large, participate in export growth, most analysts agree that increased exports will almost certainly lead to increased jobs.

Because Mexico's present average tariff for all goods and services is 10 percent, as compared to the U.S.'s 4 percent, NAFTA tariff reduction and elimination schedules over the next 10-15 years promises increased U.S. access to many Mexican markets, including environmental technologies. The U.S. and Canada have already begun a reduction of tariffs as a result of the 1989 Canada-U.S. Free Trade Agreement (CUSFTA). Similarly, most representatives of the business community are calling for a swift completion of the Uruguay Round of the GATT so that U.S. exporters can enjoy the open access to global markets that most of our competitors now enjoy in the U.S. market. Amid fears of a growing U.S. trade deficit, the present $4 billion trade surplus in the environmental technical sector offers tangible proof of this sector's enormous export potential. In addition, many environmental exports are service based—another growing U.S. export sector.

Yet while Defenders supports the notion of free trade, countries must ensure adequate infrastructure plans and resources for the increased air, water, and land traffic spawned by agreements like NAFTA and GATT. As just one example, we strongly believe that any federal agency action, including the negotiation of trade agreements, that may affect the human environment or any threatened or endangered species, should be reviewed as provided for by NEPA and the ESA. 42 U.S.C. Sections 4331 et seq.; 16 U.S.C. Sections 1531 et seq. In addition, international trade agreements should not threaten legitimate environmental and conservation standards for the sake of "free trade."

ENVIRONMENTAL EXHORTS AND NAFTA ENFORCEMENT

Because it appears almost certain that the environmental supplement to NAFTA will include a mechanism to compel enforcement of parties' environmental laws, such a mechanism should explicitly include formal technical and cooperative consultations. Very often, the underlying cause for noncompliance with environmental standards, particularly in Mexico and other less developed countries, is technological incapacity or management deficiency. U.S. enviro-technology businesses, which already possess a wide array of impressive technical goods and services, could and should be the beneficiaries of Mexico's technical needs. In this way, both the environment and U.S. jobs win.

On April 8 of this year, Defenders and the Environmental Business Council submitted a proposal to Trade Representative Mickey Kantor, in this testimony's appendix, to make technical environmental assistance a formal part of the NAFTA enforcement regime. Since at least the U.S. enforcement proposal is now established, the technological assistance aspect of the proposed U.S. regime needs to be revised.

First, however, a brief description of the U.S. enforcement proposal, as leaked to the public by the publication Inside US Trade, is necessary. A letter from Defenders in response to the U.S. proposal is included in the appendix. Essentially, a four part enforcement scheme has been established:

1. Any affected individual or group, as well as the Public Advisory Committee to the North American Commission on the Environment (NACE) or a NAFTA party itself, can petition the Secretariat of the NACE to investigate an allegation of lax or non-enforcement of environmental standards by any of the NAFTA parties. The Secretariat can also initiate an investigation of an enforcement problem(s) on its own, though the NACE Council (i.e. environmental ministers) can reject all investigation requests by the Secretariat by unanimous consent.

2. If, after investigation, the Secretariat or a NAFTA party finds a "persistent and unjustifiable pattern of nonenforcement," it may convene a special meeting of the NACE Council, which can attempt to facilitate consultation among the interested parties to resolve the dispute. The NACE Council can unanimously reject Secretariat reports on lax enforcement;

3. If after thirty days consultation is unsuccessful, the enforcement issue can be sent to the a special arbitral panel under NACE, provided at least two of the three NAFTA countries approve;

4. If the arbitral panel concludes that the lax enforcement allegations constitute a "persistent and unjustifiable pattern," a complaining country can impose trade sanctions under its own laws, provided the NACE Council does not unanimously veto the panel's decision within thirty days.

Technological assistance and management cooperation are not a formal part of the consultation process as developed by the Administration's present NACE enforcement proposal. Given Canada's apparent dislike of trade sanctions for environmental violations, as well as Mexico's financial interest in avoiding such sanctions, Defenders believes that a more result oriented approach to enforcement problems is a potential negotiating solution. NACE technical consultation could also draw upon the preliminary efforts of the existing U.S. -Mexico Environmental Business Committee, established in 1991 under the auspices of the Joint Commission on Investment and Trade.

Establishment of an explicit technical cooperation mechanism in the NACE enforcement regime, backed up by the "stick" of sanctions if necessary, would help change the course of NAFTA enforcement from an adversarial process to a process that would include the private sector of each country in working to improve enforcement in a productive fashion. This approach would protect not only the competitiveness of U.S. businesses, who by and large already comply with the toughest standards in the world, but also the environmental condition of the continent.

A REVISED ENVIRONMENTAL EXPORT PROPOSAL FOR NAFTA/NACE

Assuming the present U.S. proposal is adopted, Defenders suggests that, as mandatory part of consultation, the NACE select an industry-environmental task force with significant public and governmental participation to quickly (i.e. within 30 days) conduct a study to make two determinations: (1) whether or not the company or industry which is the subject of non-compliance possesses the technological capacity to comply with applicable environmental standards, and (2) whether or not the capacity to effectively implement environmental management is a factor to be addressed to secure compliance. The task force would conduct its study and make its final recommendations by majority vote.

A finding by the task force that technological and management capacity are obstacles to compliance would require the task force to also propose remedies to be ap-

plied within a set time frame to address these obstacles. The failure of the industry or country to adequately respond to the findings of the task force would trigger the authority of a NAFTA party or NACE Secretariat to bring the enforcement dispute before an arbitral panel, as provided by the Administration's present proposal.

NETDA'S RELATIONSHIP TO NACE ENFORCEMENT

Because one of the main purposes of NETDA is to encourage U.S. private sector exports of environmental technology and expertise, there is no question that the Environmental Trade Promotion Council, the regional cooperation centers, and the foreign American business centers in Canada and Mexico—all proposed by NETDA—should be integrally involved in the technical cooperation consultations of NACE.

The Environmental Trade Promotion Council, when developing and preparing action plans, could expressly consider opportunities for U.S. enviro-tech businesses under the NACE enforcement scheme. Given USTR's integral role in shaping trade policy and negotiating trade agreements, the Council should have an environmental representative from USTR's office at the table. The regional cooperation centers, when assisting U.S. foreign businesses, could expressly incorporate information generated by the NACE petition and report processes. Likewise, the foreign American business centers in Canada and Mexico could help flag export possibilities for U.S. businesses based upon compliance problems. In sum, the NACE enforcement regime to be created by the NAFTA environmental supplement can and should be directly tied to the environmental business opportunities that NETDA seeks to provide.

According to the Department of Commerce, Mexico is already the largest market for U.S. environmental technologies and services in Latin America. In 1992, the Mexican market for such technologies and services was over $1 billion, with the U.S. accounting for roughly ⅓ of the import market. With NAFTA, this percentage should rise rapidly, though there exists competition from Japan, Germany, France, and Switzerland. Japan and Germany, for instance, actively promote public-private promotion of environmental exports and threaten U.S. competitiveness in this area. Because potential NAFTA parties like Brazil, Venezuela, Chile, Argentina, and Columbia represent significant environmental export markets for the U.S, the time is now for the U.S. to change its trading philosophy. NETDA could be the catalyst for such trade expansion.

NETDA'S RELATIONSHIP TO GATT

Needless to say, the successful conclusion to the Uruguay Round and/or "Green" Round of GATT are far from certain. Nonetheless, the NAFTA supplemental process has revealed a growing consensus that the externalization of environmental costs creates unacceptable trade distortions and ecosystem damage. While the NACE enforcement scheme now under negotiation may not be totally appropriate in the GATT context, there will surely be efforts to encourage GATT signatories to adopt and enforce sustainable environmental regimes. If such a scenario occurs, the Environmental Trade Promotion Council, the regional cooperation centers, and the foreign American business centers will each have vital roles in facilitating U.S. environmental technical expertise throughout the globe.

Fortunately, NETDA's trade promotion goals do not violate GATT's prohibition against direct export subsidies because the assistance envisioned by the bill is aimed at marketing assistance, export research, and educational activities. A GATT signatory, however, could impose countervailing duties against a country which provides subsidies for installing pollution control technologies. Thus, if Mexico provided tax breaks to companies who install air pollution scrubbers, as a means of securing compliance under a NACE enforcement action, a non-NAFTA party to the GATT could theoretically impose countervailing duties upon Mexico. Although the negotiators in the Uruguay Round have actively considered allowing such environmental subsidies as a WATT exception, the proposal was has been deleted, partially at the request of the Bush Administration. This environmental anomaly, among many others in the Uruguay Round, should be remedied by the Clinton GATT negotiators.

CONSERVATION CONCERNS UNDER NETDA

The Department of the Interior already has a number of cooperative activities and projects with Mexico and Canada. While many of these activities are appropriately conducted on the government to government level, it seems to us that there are significant private sector opportunities, particularly in providing conservation and land use-related services in Mexico. For example, under the Endangered Species Act, landowners are allowed to carry out activities that may incidentally kill protected species if they create and implement a plan that conserves the habitat of the species. ESA, 16 U.S.C. Section 1539(a)(2).

Although the Mexican government is obviously not directly subject to this provision of U.S. law, she process of habitat conservation planning (HCP) has created a large body of technical knowledge that could be imparted to interested Mexican parties. Secretary Babbitt's California gnatcatcher agreement is the latest effort to balance economic growth and effective conservation in this fashion. Given that Mexico has signed the Biodiversity Convention, which requires each signatory to implement a national biodiversity conservation program, the American HCP experience could be valuable to the Mexican government and investors in Mexico. See, e.g. NAFTA Article 1114. There are many other lesser developed countries that could similarly benefit from American conservation services.

Therefore, we believe that the Department of the Interior should be an agency on the Environmental Trade Promotion Council, and that conservation services (and technology) be an integral part of the regional cooperation centers and American foreign business centers. The FWS is already working with the U.S. embassy in Mexico to establish a technical attache in Mexico City.

U.S. FOREIGN AID UNDER NETDA

NETDA recognizes that foreign aid agencies like AID and the Export-Import Bank are vital slices of the environmental export pie. NEDTA also proposes to establish an environmental service wing within the Peace Corps to promote global sustainable development—a move we support.

NETDA, however, neglects the Treasury Department, which possesses the authority to instruct the U.S. representative to the World Bank and other multilateral lending institutions how to cast the vote of the United States on certain lending projects. See Exec. Order 11,269, 31 Fed.Reg. 2813 (1966), reprinted in 1966 U.S. Code Cong. & Admin. News 4622; see also 22 U.S.C. Sections 286-286kk. The Treasury Department, of course, also formulates broad economic policy for the President. Given these roles of Treasury, we suggest that it also become a member of the Environmental Trade Promotion Council. Furthermore, in all instances of U.S. foreign aid where appropriate, U.S. agencies should promote foreign purchases of useful U.S. environmental technical goods and services to help foster sustainable development.

CONCLUSION

Despite the existence of present laws that attempt to promote U.S. environmental exports, it is clear that more should be done. Just last month, on Earth Day, President Clinton formally asked the Secretary of Commerce "to develop an interagency strategic plan to increase exports of U.S. -made environmental technologies and to improve the competitiveness of these technologies." NETDA constructively builds upon the President's request. In our opinion, the primary strength of NETDA is that it combines the resources of the public sector with the expertise of the private sector to forge new business opportunities for environmentally friendly goods and services.

Thank you, Mr. Chairman. My testimony is concluded.

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[The Houston Chronicle, April 6, 1993]

We Can Have Free Trade and Clean Environment

(By Rodger Schlickeisen)

One of the most pressing questions facing the Clinton administration and the new Congress is whether to approve the North American Free Trade Agreement. Because NAFTA would phase out almost all trade barriers between Canada, the United States and Mexico, few decisions have the potential to exert more influence on the economy and environment of this continent. Even without NAFTA, these three countries last year exchanged goods and services valued at roughly $130 billion. Considering that countries like Chile, Brazil and Argentina could join NAFTA by the end of the century, the pact's tentacles could eventually embrace the entire Western Hemisphere.

Few questions will be more contentious than NAFTA, since even environmentalists are not in agreement about the likely impact of this first free-trade pact linking the economies of developed and developing nations. There is little doubt that the current NAFTA draft, negotiated by the Bush administration, provides inadequate assurances that the pact would not make Mexico a haven for American industries eager to escape the United States' strict environmental regulations. Nonetheless, expanded free trade has the potential to break the chains of poverty of millions of people, while providing enormous new resources for investment in environmental cleanup and conservation. Fortunately, Mexico still has rich natural assets worthy of pro-

tection. But without improvement in Mexico's economy, any substantial source of money to finance large-scale conservation is hard to identify.

Thus, President Clinton is wise in taking a position between those who have called for outright rejection of NAFTA and those who have endorsed it as proposed. NAFTA should be approved, but only in conjunction with simultaneous approval of a comprehensive environmental supplemental agreement that must have the same legal status as NAFTA itself. The president has also called for supplemental agreements on labor rights and import surges.

What should the environmental side agreement do?

First, it must breach the tight secrecy in which the present NAFTA draft proposes to resolve trade disputes. Opening up the dispute process to public participation is desirable for its own sake and also would alleviate substantive concerns about the agreement.

Second, a sufficient and designated source of funds must be provided for proper infrastructure development, environmental enforcement and cleanup.

Third, there must be a more effective deterrent against U.S. industries that head south to escape our environmental law and regulations.

Fourth, there must be better international protection for all environmental agreements to which the United States is or will become a party.

Fifth, a strong North American Commission on the Environment must he crested to monitor the environmental effects of the treaty and compel enforcement of existing standards if laws already on the books are not enforced in Mexico. Americans will suffer both competitive and environmental injuries. In addition, strict enforcement would greatly benefit the burgeoning U.S. enviro-tech industries, creating thousands of new American jobs.

The side agreement also must deal with trade restrictions based upon methods of producing goods. As one example, the current NAFTA text does not address the basis of the dispute between the United States and Mexico regarding the thousands of Pacific Ocean dolphins that continue to be killed by the Mexican tuna fleet. This dispute arose under the auspices of the multilateral General Agreement on Tariffs and Trade, when Mexico challenged the U.S. Marine Mammal Protection Act's ban on certain tuna imports. A GATT dispute-resolution panel then ruled that the import bans violated GATT, though the decision has not yet been adopted in the full GATT.

The main point, however, is that neither GATT nor NAFTA should prohibit the right of a country to impose non-discriminatory and trade-based conservation standards to protect resources outside its territorial jurisdiction, or to have some say regarding the producing methods used in goods it imports.If the United States and other leading nations do not look beyond their own borders to advance environmentally sustainable practices, we risk encouraging all trading nations to opt for the lowest common environmental denominator. Such practices under cut our laws and our producers. And if we permit trade-based conservation measures like our hard-won "dolphin-safe tuna" restrictions to be nullified by international trade agreements, we will foolishly deny ourselves a powerful and legitimate bargaining tool on behalf of the environment; namely access to the lucrative U.S. marketplace

Trade and the environment need not be competing interests. But persuading free-traders and environmentalists to bury past grievances and to replace their old competitive relationship with a new symbiotic one will require real leadership from Congress and the White House. The first step is to negotiate a good NAFTA environmental side agreement.

LETTER FROM RODGER SCHLICKEISEN, PRESIDENT, DEFENDERS OF WILDLIFE

APRIL 8, 1993.

The Honorable MICKEY KANTOR,
U.S. Trade Representative,
Washington, DC 20506

DEAR AMBASSADOR KANTOR: We are writing to propose for your consideration a mechanism, as part of the procedures of the North America Commission on the Environment (NACE), to resolve trade disputes based upon noncompliance with national, state and local environmental standards by allowing substantial participation by envirotech industry representatives from Canada, Mexico, and the United States in the dispute resolution process.

This proposal is similar to the proposal by Senator Baucus and others that would direct a NACE "consulting arm" to become involved in a trade dispute after NACE had completed an "investigation" and found "noncompliance." According to the Baucus proposal, the NACE consulting arm would call upon scientific and engineering

consultants who would help to formulate a "compliance plan" that must be implemented within four months. Failure to carry out the compliance plan could lead to the imposition of "penalties" by the complaining government.

Our proposal would involve participation by the environmental industry in the United States, Mexico, and Canada much earlier in the process of addressing environmental compliance. If a business, industry, or government believes that it is at a competitive trade disadvantage because of noncompliance with existing environmental standards, an industry-led task force, with sufficient governmental and public participation, would quickly conduct a study to make two determinations: (1) whether or not the company or industry which is the subject of the study possess the technological capacity to comply with applicable environmental standards, and (2) whether or not the capacity to effectively implement environmental management is a factor to be addressed in ensuring compliance. The task force would conduct its study and make its final recommendations by majority vote.

A finding by the task force that technological and management capacity are obstacles to compliance would require the task force to also propose remedies to be applied within a set time frame to address these obstacles. The failure of the industry or country to respond adequately to the findings of the task force could lead to the imposition of sanctions by the complaining nation through the NACE process as proposed by Senator Baucus, Representatives Wyden and Richardson, and members of the environmental community.

We believe that this enforcement approach has a number of beneficial features. First, the focus of attention pursuant to our proposal is on the underlying causes for the noncompliance with national environmental standards—technological incapacity and management deficiency in industry and government—and not entirely and initially upon the incident of noncompliance itself.

Second, environmental industry and business professionals in the three countries would initially take the lead in the task force conducting the study, with the public and governments also sufficiently represented. We believe that such industry-to-industry cooperation will help to successfully resolve potential trade disputes.

Third, if the task force finds that technological and management problems are serious obstacles to compliance with environmental standards, a plan to remedy such deficiencies will be quickly proposed for consideration by the industry and government that are the subject of the study.

Fourth, we believe that this proposal satisfactorily addresses the sovereignty issues that have been raised with respect to supranational investigatory powers of NACE in that it is quite similar to authority already granted by Article 506 of NAFTA. The ability of a complaining government to impose trade sanctions upon a government that fails to ensure that its environmental laws are complied with is the ultimate authority under our proposal, as it is under other enforcement proposals.

Additional issues, such as avoidance of conflict of interest by task force members and protection of confidential business information, can be satisfactorily addressed through the operation of well-known legal principles.

We believe that this proposal has the merit of changing the course of NAFTA enforcement from an adversarial process to a process that includes the private sector of each country in working to improve enforcement in a productive fashion. We would be pleased to discuss this proposal and will gladly provide additional information.

Sincerely,

RODGER SCHLICKEISEN,
President, Defenders of Wildlife.

LETTER FROM WILLIAM J. SNAPE III, ASSOCIATE COUNSEL, DEFENDERS OF WILDLIFE

MAY 18, 1993.

Mr. BRYAN SAMUEL,
U.S. Trade Representative's Office,
Washington, DC 20506

DEAR BRYAN: Thank you for briefing the environmental community this morning on the U.S. proposal to negotiate an environmental supplement to NAFTA. Despite some progress in several areas, there exist five major and outstanding concerns that need to be addressed if Defenders is to support the final NAFTA package. We note that each of these concerns was mentioned in both our March 4 and May 4 letters to Ambassador Kantor.

1. PROCESS STANDARDS AND ENVIRONMENTAL "EXCEPTIONS" TO NAFTA

No trade agreement should preclude a country from establishing standards that apply to environmentally degrading activities outside its territorial jurisdiction, so long as the standard adheres to the basic trade principles of non-discrimination and national treatment. While we are encouraged by the Clinton Administration's present efforts to adopt and push such an understanding at the OECD and GATT, we are quite worried about virtually ignoring the process issue in NAFTA without concrete commitments by the Administration in those other trade forums.

If, for well-enunciated strategic reasons, the Administration decides to relegate the issue of process standards (as they relate to the environmental exceptions in NAFTA Article 2101) to a "NACE function," then the U.S. must secure agreement by Mexico to the provisions of the International Dolphin Conservation Act (IDCA) signed into law last Fall. Mexico gas dragged its heels on this issue for too long and must be made to understand the seriousness of the U.S. position. We also remind you of the positive effects such a moratorium agreement would have upon the "Tuna/Dolphin II" case brought by the European Community against the U.S.

2. ENFORCEMENT

The legal trigger of "persistent and unjustifiable pattern" is open to wide abuse. This term must be better defined (or changed) if the NAFTA parties are to finally acknowledge that lax enforcement of environmental standards creates unfair competitive advantages and environmental degradation. We also object to the ability of the NACE Council to reject a Secretariat report for merely being "deficient."

3. DISPUTE SETTLEMENT RELATING TO CHAPTERS 7 AND 9

We are very disappointed that no explicit reforms of the closed dispute resolution process under Chapter 20 were addressed by your proposal, particularly given that such changes could be made without renegotiating the actual text of the present NAFTA. We still maintain that you could break Article 2012's stranglehold on confidentiality by making an exception for challenges to "environmental" standards. Also, perhaps you could give the Public Advisory Committee an express role in disputes on environmental or conservation standards. We remind you that the American people will have a hard time accepting a NAFTA that can rule against democratically established federal, state, or local standards, particularly when such proceedings are closed to affected individuals.

Questions of openness and public accountability aside, the legal test utilized by a dispute panel in judging environmental and conservation standards will also be crucial. Thus, we again urge you to clarify GATT terms of art like "necessary," or have the NAFTA parties agree not to bring cases under Chapter 20 challenging a standard relating to pesticide residues or food contaminants except on the ground that the standard is discriminatory or a disguised trade barrier.

4. RELATIONSHIP BETWEEN THE NACE SECRETARIAT, THE NACE COUNCIL, AND THE NACS PUBLIC ADVISORY COMMITTEE

Overall, we think you have done a solid job crafting reasonable checks and balances between the Secretariat and Council. Nonetheless, just as some are concerned that the Secretariat is not accountable enough to the Council, we are concerned that the Secretariat is not accountable enough to the general public. We believe, therefore, that the Public Advis6ty Committee must have the ability to compel actions by the Secretariat in certain instances.

5. COMMUNITY RIGHT-TO-KNOW

We strongly believe that community right-to-know laws consistent with Article 10 of the Rio Declaration should be an explicit obligation of the NAFTA parties.

We hope you will share this letter with your colleagues at USTR, EPA, State, and the rest of the Clinton Administration. In making these comments, we have avoided rehashing our laundry list of concerns, and have instead focused on those issues apparently not addressed by the Administration's present proposal. As just one example, we want to ensure that issues relating to border cleanup and infrastructure needs receive the attention they deserve. (And, yes, we believe that USTR should change the procedure by which organizations like Defenders can look at documents such as the present proposal). Again, we reiterate that the May 4 letter from seven environmental groups to Ambassador Kantor is a bottom line document for us, in terms of the policy ends that document espouses.

Thank you for your consideration. Best of luck to you and the rest of the negotiators headed to Ottawa.

Sincerely,

WILLIAM J. SNAPE III,
Associate Counsel.

Senator KERRY. Thank you, Mr. Snape. Thank you all for important and helpful testimony. What I would like to do is engage in a dialog between panelists, which may be a helpful way of fleshing out some of the issues here. There are a number of areas to turn to and I want to try to move it along, but let me turn first to the Peace Corps issue.

I know that every agency always has a reluctance to be micromanaged and to have Congress to come along and say gee, create a senior corps within the corps, and everybody sits there and says wow, we really kind of like what we have. We are comfortable the way we are going. But would you not acknowledge that there is a distinction between the current level of Peace Corps activity and a higher level of input, a kind of senior involvement of a policymaker rather than the village/grassroots level?

Mr. EKSTROM. Yes, Mr. Chairman, one thing that is very important to keep in mind about the Peace Corps is that traditionally we have been primarily involved at the village level. I mean, that is a fact. However, for the last 10 or 15 years we have also had increasing numbers of volunteers working at high levels in government ministries, with private voluntary organizations, with nongovernmental organizations. That continues to be the case.

Our ability to recruit these individuals has also been impressive. We are able to meet about 97 percent of the requests that received these days, including those requests for highly skilled and experienced persons.

We also have the authority under the Peace Corps Act to vary the length of service. This is something that not very many people know about, but we have the authority to tailor the length of Peace Corps service to the particular task that has been requested by the host country. So that if, let us say, a high-powered environmental specialist was needed for a particular piece of work that would, let us say, require 2 or 5 months of effort. That would be no problem for us. We have, under the act, under the provision of the act right now, we have the authority to do that kind of thing.

And I would just add that we wholeheartedly support this bill. I mean, 1074 makes sense to us. All we are saying is that we do not really need to create a new structure.

Senator KERRY. I understand. Let me ask you this question then, sort of following on it, and I am not resisting what you are saying, I am trying to explore what you are saying.

I once ran a district attorney's office, and within the district attorney's office we created a priority prosecution unit or an arson task force or a special rape prosecution unit. And everybody within it was an assistant district attorney and in the office, but they understood there was sort of a prioritization and the public had a sense of prioritization.

It seems to me within the Peace Corps that there is a capacity here, administratively, simply to order something in a certain way and raise it to a certain level of importance and visibility that would enhance your mission rather than detract from it. If you are

today already fielding people for an environmental purpose, marketing them for an environmental purpose, effectively disbursing them with environmental mission, I am having difficulty understanding why intensifying the focus on that mission would not inure to your benefit and to the benefit of the environmental message, if you will.

Mr. EKSTROM. Yes. I understand what you are saying. A couple of things I would like to mention in response to that. First of all, we recognize that we have a role in promoting and programming in areas of particular importance from an American perspective, and environmental programming is certainly one of those. We have designated sectors for special emphasis, and at this time the environment, small business, and urban development are the three program areas that are given top priority in the Peace Corps.

You can see the result of this in the size, for example, of our environmental programming unit. The environmental programming unit has more environmental specialists that any of the other programming units that we have in the Peace Corps. And we are able to accomplish this by collaborating with other U.S. Government agencies. We receive good help from AID in this connection. That is consistent with their own interests in environmental programming.

I understand what you are saying and I agree that it is appropriate for the Peace Corps to focus on special areas, and I would submit to you that we are doing that, and that is reflected——

Senator KERRY. You do not think it would enhance your recruitment of some of the kinds of people Mr. Connors has talked about to have them know that there is this special concept within the Peace Corps? I mean, I would imagine if you asked most people in the environmental field and elsewhere today, they do not have a clue that they could think of the Peace Corps in environmental terms.

Mr. EKSTROM. Well, now, that, we would welcome. We would welcome a sense of Congress resolution indicating that this is an area that is appropriate for Peace Corps involvement and that the Peace Corps needs to focus increasingly in this area.

All I am saying to you is that the creation of a separate division is really—from our perspective it is not something that is going to increase our ability to be effective in environmental work.

Senator KERRY. Well, I certainly like to explore that more with the director and others.

Mr. EKSTROM. We would welcome that, sir.

Senator KERRY. I am not convinced that this has been thought out completely. I think there may be a little bit of an instant reaction, sort of, oh, God, we do not need a charge—you know, boom. I do not view this as a bureaucratic add on. I view it as an enhancement bureaucratically within the existing structure of a capacity to maximize your message as well as the mission. I do not know if you want to comment on that, Don.

Mr. CONNORS. Just a few thoughts, Mr. Chairman. You are asking exactly the right questions. I want to give you an example of how I think this need exists through my work wearing another hat. I am working with colleagues in the problems of the contaminated Black Sea area, and over the next couple of years we will be work-

ing with Bulgaria in developing a new environmental management system for reducing the sources of contamination that go into the Black Sea, and we hope, over a few years, we will develop an entire developmental regional management system for the Black Sea and other parts of the world.

Bulgaria needs help. It needs help at the very highest levels of people who know something about environmental management issues. And if that is true in Bulgaria, I will guarantee you it is true in the Indian Ocean and many other parts of the world. I have in mind that there is such an enormous need that a more aggressive outreach rather than a passive response is required. But a more aggressive outreach to other nations of the world that we have a program, we have these resources, there are skills, is there someone you would like or some skill that you would like—would be effective.

And that needs to be translated looking inward in the United States. There is an enormous body of environmental professional competence in this country, and there are ways to reach that community of people, through the Environmental Business Council and through the Air and Waste Management Association and the other professional organizations. And it is linking those people to those needs that should be done.

One final thought: If an environmental professional, let us say, were to go to Bulgaria or Romania, and I have been doing some, was doing some work a few years ago in Hungary, they need some support back home. If you are going to send some environmental professionals, let us say, to some region of the world, it seems to me appropriate that there would be a formal linkage between EPA or the Energy Department and the appropriate offices within those Departments so that technical materials that a volunteer needs might be made available to the volunteer on the ground.

I do not think that is the regular practice of the Peace Corps because I have not had that kind of a need because they are not putting people at the levels you and I are talking about. In no way do I have any criticism of the Peace Corps. I think it is such a superb organization, and has done so much for America and for Americans. I am recommending more aggressive action, capacity building. And there is also the role for EPA, Energy, and Commerce in capacity building in this area, as well.

Senator KERRY. I appreciate that. I do not know if you want to respond, Mr. Eckstrom.

Mr. EKSTROM. Well, we do provide extensive backstopping for our volunteers in the field, backstopping from technical experts that we hire at the Peace Corps, and also experts that are available to us through agreements that we have with other U.S. Government agencies.

We are able to respond effectively to requests that we are receiving for these high-level folks.

Senator KERRY. But Mr. Connors is not talking about responding. We understand there can be a response. We are talking about an affirmative, proactive, aggressive, outreach effort based on the notion there are great environmental concerns and we need to ask to what level do you want to raise the environmental concerns? We hear a lot of rhetoric about that.

We are behind the curve here. I love the Peace Corps. The Peace Corps is the centerpiece of what brought me into public service and many of our generation, and it is one of the great success stories. And I would like to see it enhanced in its capacity to carry on and be a centerpiece of the next frontier that we have to cross with respect to these challenges.

It seems to me, as I look around, having been to Rio, having been to many of these counties, having flown across most of the devastated clearcut forests of the world, that I have a pretty strong conviction we are on a losing curve here, and if we just continue to do business as usual we are not going to turn the various business interests that are so dependent currently on this current source of revenue toward other things without major high-level effort.

It just strikes me that raising the stakes a little is an important ingredient of underlining that we are taking this far more seriously than we have in the past.

So, let me ask you to think about that, and I am not going to let go easily on this concept. I would like to talk with the director and others and really see if we cannot mold this a little bit, and with the Vice President and others and see what we can do to try to heighten the profile of this issue.

Yes, Mr. Connors.

Mr. CONNORS. Mr. Chairman, the issue of capacity building that will have the indirect effect of increasing the connection between our industry and the consumers of environmental goods and services. This is an element of the strategic plan that Jonathan Sallet and the Commerce Department and others are and ought to be working on. EPA and Energy have an important role in that, as well. A terribly important role.

Senator KERRY. Agreed. And I think the points were well taken. I think Mr. Snape's points about who might be included in this are also well-taken, although you become sort of a government within the Government. We have got to figure out how to keep our efforts efficient.

Let me bring Mr. Sallet and Mr. Snape into this dialog a little bit, if I can. Mr. Snape, you said something to the effect that "we are not quite there yet," when you started talking about the environmental export policy, et cetera, and Mr. Sallet has mentioned some of the things that we are starting to do, and the TPCC is obviously just now coming together and getting going.

What would you highlight as missing when you say we are not quite there yet? What are the ingredients that we have got to get coordinated or implemented?

Mr. SNAPE. I actually was not specifically talking about environmental exports as much as I was talking about the policy interconnection between trade and the environment. So, on the specific issue of environmental exports, I have no gripe there. I think that is a part, however, of a larger picture on trade in the environment which is not there yet. And there, we are talking about, of course, NAFTA, which is highly politicized at this point, the Uruguay Round of GATT which will become soon politicized, but let me give you an example of a somewhat nonpolitical form where the U.S. is still behind the eight ball.

Next week I will be fortunate enough to go to Paris for the OECD Trade and the Environment Working Group meeting. Now, unless something dramatically changes between now and next week, the United States will really not have any type of substantive policy. And as you may or may not know, the OECD and the directives that come out of the OECD have a huge bearing upon what happens at the Uruguay Round of GATT.

If we are going to tie in the issue of environmental exports, particularly U.S. environmental exports, to the idea of enforcement, which is a theme we have seen in NAFTA and which I think ought to be transferred to GATT, we ought to start to be thinking about these things.

Now, I think people have been thinking about it, but at this point, USTR is overwhelmed, and in terms of trade policy, USTR is the lead, along with the State Department and EPA. And USTR has just not been able, and it is not a criticism of them as much as it is a reality, they have not been able to take a big look at the big picture. And so that is what I was referring to when I said they do not quite have—we are not quite there yet. That is what I was referring to.

Senator KERRY. Do you want to comment on that, Mr. Sallet?

Mr. SALLET. I would, Senator, a couple of things. Of course, we are very active, as you know, the Department of Commerce, with USTR, the White House, the rest of the Government, in considering these questions of trade policy. Secretary Brown has been very active, both externally and within the administration, on the issues.

But this connects to a point, and I want to use a word that you used in your opening statement because I think it shows part of the limitations of past thinking. You talked about new paradigms and paradigm shifts. One of the things that happens when you have a shift of paradigms is that issues that seemed unconnected before are now seen to have a very close relation.

I think trade policy and technology policy are good examples of that. During the cold war era, with ideological views that said there was no room in Government for technology policy, the two may have had nothing to do with each other. But in the new paradigm that you described, in fact, what we understand now is that the two are very closely related, that for either to be successful, the other one must be successful, as well.

We want technology policy that helps make American businesses competitive so they can go and sell in the open markets that exist overseas. And we want trade policy that makes sure those markets are open so that where we have competitive abilities in the United States, we can go, show how good we are in those kinds of newly opened foreign markets.

One of the things we are emphasizing through the Trade Promotion Coordinating Committee is the importance of disregarding this past separation between trade and technology, and I will add environmental policies, in understanding that they were all facets, interrelated facets, of our goal of real economic growth in America.

So, it seems to me that your comments this morning are exactly right and exactly on point, and the instruction to us which we are going to try to implement through this committee is that we need

to think of all of these pieces as working toward similar goals is, we think, very important.

Senator KERRY. Where is the TPCC now in terms of its organizational efforts and policy?

Mr. SALLET. Yesterday, Secretary Brown testified before the Banking Committee on what is called the section 206 report, which is the annual midyear report that is delivered to the Senate Banking Committee and the House Foreign Affairs Committee. And in that document he sketched out the broad goals of bringing together trade and technology policy, and he noted some of the particular examples of each that are already being implemented in the administration and others for which we seek funding in the current budget cycle.

Internally, we are in the process of having working groups which are formulating different pieces of the strategy, and soon, the Secretary will begin meeting with those working groups and bringing them up together, so that by September we can present an integrated strategy on behalf of all the 19 different agencies that form this committee.

Senator KERRY. Do you sense that the various programs that I alluded to that are kind of tugging out there, disparate, are, in fact, pulling together within this new concept?

Mr. SALLET. I think so, and there are a couple of different pieces to this, and you have noted them in your opening statement. One very important thing that can be done is simply to make sure the information is processed and made available in an efficient fashion. Lots of different agencies have information. In fact, different parts of the Department of Commerce do. One of the things we are working on is just trying to make sure that our system is user friendly for an American business that perhaps has done some exporting in the past but not very much and wants to do more.

A second important question thought——

Senator KERRY. In conjunction with that, if I could just interrupt, do you concur with the notion, then, of trying to provide the expertise for the one-stop enviro shopping?

Mr. SALLET. As you know, the administration has yet to take a formal position on the legislation, but I certainly will say that the notion of one-stop shopping is the exact notion that we are hoping to implement through this strategy, to try to make this information as easy and available as possible.

Indeed, and this is another place where trade and technology come together, imagine a medium size manufacturer in Massachusetts that wants to, (*a*) update its manufacturing processes, and (*b*) learn about foreign markets. It would be nice if that manufacturer could go to a single source of information from the Federal Government and learn how to access both the technology and the trade programs. So, it certainly is consistent with your notion of how this ought to work.

The second piece I was going to mention—who knows how the agencies will react to this—is the allocation of resources for export promotion is, as you have said, quite dramatically now in favor of agricultural exports. Secretary Brown yesterday, in front of the Senate Banking Committee, noted that there are people who think

we ought to shift that emphasis to more closely reflect the nature of the exports we are actually doing.

But there are political considerations, different agencies may have different views on that. We are hoping to pull together consensus on that, as well.

Senator KERRY. Can that be done purely by administrative allocation?

Mr. SALLET. We are exploring whether it can be. We are hopeful that in the budget process that OMB and the President, if they would choose to reorient the nature of export promotion might be able to do it. It might also, though, as the Secretary noted yesterday in his testimony, require congressional action.

Senator KERRY. Are you folks prepared to treat envirotechnology as a "critical technology"?

Mr. SALLET. Well, the term "critical technology" is used in different contexts for different purposes. For the purpose, for example, of our ATP program which funds R&D, we have looked and found, to our considerable delight, that environmental technologies have, in fact, been a part of the ATP program already, that, for example, a biotechnology project that is looking at natural pesticides which have less harmful side effects than artificial pesticides, in automobile manufacturing the use of plastic—new materials processing which reduces both the use of energy and promotes recycling. We have had a project going reduce the use of toxins in the manufacturing processes to help us use advance manufacturing, and also in other areas of the use of plastics, programs, research that is designed to help recycling those plastics.

So, I am informed by the people who administer these programs that these kinds of technologies certainly are eligible under existing law for participation in the ATP program.

In terms of your question about critical technologies, the thing that is important to remember here is an environmental technology, unlike some other technologies, describes an end use and not a process, and that end use can be of several different kinds. One can want to avoid pollution, control pollution that is created but we do not want to let escape into the atmosphere, to monitor different activities to find out whether they caused pollution, and then, of course, remediation cleanup if pollution has already occurred. So, these different—they are really different sets of technologies, different bundles of technologies that we would be working with to try to see how we can fold in both to our research and development and also our manufacturing extension programs.

Senator KERRY. I am not sure I get out of that why it would not be considered a critical technology as an export——

Mr. SALLET. Oh, I am sorry, Senator, if I left that impression. I do not mean to say it would not be. I simply mean to say that in thinking about this problem it may not be one single kind of technology. It may be different kinds of technologies, each of which is important in dealing with environmental issues.

Senator KERRY. Do you want to comment, Mr. Connors?

Mr. CONNORS. No, I think he has got it on target, and I agree with his analysis.

I think, however, it is very important that, as the Commerce Department and the committee proceed with their work, that the en-

vironmental industry is able to connect to the Department so that the Department and other Federal agencies know exactly what they do.

Senator KERRY. What process will guarantee that?

Mr. SALLET. As we go forward with—we have started our working group that was established—well, let me start back. On a less formal basis than we might ultimately have, of course, the people from the Department of Commerce have been in regular contact, particularly with Mr. Connors' group.

I went up to Needham and talked to them early in our process. I think the week after the President's Earth Day address, to talk about how we might work together. The same day that you appeared in Washington at that conference, that evening the Secretary came and spoke at the dinner gathering. These kinds of informal contacts have and will continue.

In addition to that, as we go forward in our working groups on the President's directive to come up with a strategy for environmental technologies and environmental exports, we will soon come to the point where we have enough sense of what we do inside the Government so that we can invite in representatives of the private sector and find out whether our initial assessments seem to be right and make sure we get their input as we go forward to formulating a strategy.

Senator KERRY. All right. Well, I look forward to working with you on that. I hope we can make some rapid progress on this, particularly in the context of this legislation. I do not think it should be particularly controversial. We ought to be able to iron out our differences. But I think it would be very helpful to start to really elevate the "new paradigm"—horrible word, but the concept is one we have to deal with. And if we can try to do that it would be helpful.

Yes, Mr. Connors?

Mr. CONNORS. Mr. Chairman, I hear you express a sense of urgency about all of this, and frankly, I applaud your expression of concern. I think we have a global environmental crisis, and we in the United States have knowledge and skills and products and technology that can be helpful. And I think we have got to do as rapidly as we can——

Senator KERRY. Well, I could not agree with you more. You know, I tell you, as a member of the Foreign Relations Committee and in other roles, I have had a capacity to visit a few of these corners of the world, and I just see disaster growing. I was in Bangkok recently trying to go out running early in the morning when there were not that many cars, and your lungs sear so badly within 15 minutes you cannot run. You get people running around with gas masks on and surgical masks across their faces.

You go up one country away and the Thai businessmen are busy raping the forests of Laos for the timber. I was appalled. I flew across most of Laos to see the most remote triple canopy jungle areas now tracked with elephant tracks or trucks, with logging going on, burning going on, and quite simply we are not involved enough in trying to shift their thinking and processes.

You go to any one of those countries, to the Yellow River, for example, where enormous flooding occurs as a consequence of the cut-

ting practices, with water-borne diseases, and kids dying, It makes an extraordinary impact. The same problem occurs with flooding on the Aral Sea, with the cotton growing in the south of Russia as a result of the diverting of the water and the damming of all of the rivers there, all the way over to the Danube.

You go to each country and encounter grave ecological problems. Poland will not have any drinking water that is potable in about 8 years, and one-quarter to one-third of their land is not even usable for growing anything anymore. It is ultimate disaster that is accruing. And we have little stopgap measures here and there. We have got the driftnet fishing law which Senator Stevens and I worked on, and we finally got this incredible stripmining of the ocean stopped, but we still have practices going on that breach faith with all of those things, and so forth.

And then, you know, you do not have to go to other countries to find environmental degradation. You can look at our own country where we have got several thousand Superfund sites totally unfunded, with 60 percent of the money going to lawyers and administrative costs. I mean, we are in our own morass here.

So, I think we are building up a much more significant environmental confrontation that most people want to acknowledge or admit. And these environmental technologies are a way to marry the concept of development and growth with environmental protection. And if we would accelerate our emphasis on these through Bell Laboratory-type efforts, through these centers that we are putting in this legislation, then we do what came out of the holes of Manhattan type project.

When we knew we had to do it and we knew security was at risk, we invested the money and business bellied up for the money and for the interest and we did it. But where the market does not yet do that, Government has got a responsibility to help provide the capacity for some of those choices to take place.

And I keep saying to people, you know, we defined our national security after World War II in terms of building weapons systems, and a lot of companies got rich and a lot of jobs were created in responding to that definition of "threat." If we would simply be wise enough today to redefine the threat in its real context of the nineties, which is what I have just described, and hold out some money to meet the need of that threat, I guarantee you, we can have Peace Corps folks around the world helping to implement these changes in countries, and we can have source point pollution control technologies being put in countless companies to help them to develop, and it will be a new world.

There is an enormous urgency to it. So, I do not even mean to say it subtly. It should be squarely between the eyes.

Mr. SALLET. If I might, Senator, one of the helpful aspects of this is holding hearings like this one this morning, because the message that you have articulated and that we have talked about this morning is not only important, it is important that we get it out to people. And that is why we appreciate the chance to come up.

Senator KERRY. Well, I appreciate that. I have no illusion, after 9 years of hearings around here, that some hearings lead to more results than others, but there is a limit even to the hearing process of the Congress. This needs Presidential leadership, it needs our

agencies understanding it, and we really need a sense of urgency. This is not something that can drag on at the normal pace of Government if we do not expect to be totally undercut by other countries that are far more hungry than we are to take this market.

And the great statement on that—I get "Johnny-one-note" about this—but compare the 50 U.S. companies versus 700 Japanese companies in Rio. That is the message. And if we do not understand that message, we are crazy.

Mr. SALLET. Of course, we have had a change in leadership since that conference. With this new leadership we will speak that message with the urgency that you require.

Senator KERRY. We sure hope so. Mr. Connors.

Mr. CONNORS. Could I make one final thought? I am struck by Jonathan's comment, because he has got it exactly right. We must get this story out. And we would like, with the Commerce Department and Energy and EPA and USAID with support from Congress, this fall perhaps we could put together a series of efforts around the country to try to get the message out. It is not something that is self-executing.

Human beings have to get up and go and do it and tell the story and meet with the media. And we want to do that. And we would like to do this as a joint venture.

Senator KERRY. Well, I have been busy trying to map together the concept of a book to help do it. [Laughter.]

I keep getting diverted by Russian documents on POW's or something. But I am hoping that I can stay focused and help do it.

Thank you all, very, very much. We appreciate it. And I look forward, Mr. Ekstrom, to following up with you and seeing how we can iron that out.

If I could ask the members of the second panel to come up and talk to us a little bit about specifics and help us to understand the realities of these opportunities, that would be very helpful.

Folks, if you want, I would appreciate it if we could start with Mr. Munson, unless you have decided as to the order. If not, we can just run down the line here.

Let me try to ask each of you if you could hang to about a 5-minute summary or so. I do not want to cut anybody off. But we have got a 12 noon Policy Committee meeting. I can be a little late, but I do not want to miss it, obviously.

So, Mr. Munson, would you lead off?

STATEMENT OF STEVEN MUNSON, PRESIDENT AND CEO, VULCAN POWER CO.

Mr. MUNSON. I am Steven Munson. I am the CEO of Vulcan Power Co. We are a geothermal developer located in California and the Pacific Northwest. I am a director of the Oregon Environmental Technology Association, and a sponsor and director of the Environmental Business Council of the United States.

I wish to thank you and other members of the subcommittee and staff for inviting me to testify. My comments are directed toward the establishment of additional levels of international environmental green trade by U.S. corporations, including additional, clean sustainable geothermal electric power projects worldwide.

This proposed legislation could do much to further these worthwhile, important objectives.

I wish to thank you, Senator Kerry, on behalf of the Oregon Environmental Technology Association and the Environment Business Council for your efforts to develop policies and programs to clean up our fouled environment, to protect a portion of the few remaining undamaged ecosystems on the planet, and also to provide stimulus to the economic engine which much be harnessed to undertake these crucial life-support activities.

Thank you very much.

Our firm is privileged to sponsor both OETA and the EBC, which you have heard from earlier today. Mr. Connors and Mr. Driscoll are doing an excellent job at EBC to identify barriers and problems to American leadership in the international environmental affairs area, and forming a national umbrella organization to bring together regional groups and interests in helping to focus the many broad interests of the American environmental technology industry upon a common agenda to both clean up the planet and to give impetus to our struggling economic base.

A continuing refrain echoed in policy circles inside and outside the Beltway still seems to be jobs versus the environment. Or, if you prefer, man versus nature. This proposed legislation reflects a new ethic. From what I have seen out in the real world as we called it in business school 25 years ago, this legislation represents a more thoughtful ethic, which will also make good economic sense to the United States.

This legislation will help to assure the sustainability of life forms on this planet. This legislation is concerned with jobs for the environment, and will help to assure the continued existence of both man and nature, instead of extending the old war and simply pitting man versus nature.

Attempting to put partisan politics aside for the moment, it is clear to me that Vice President Gore was on to something very big in stressing the then-novel notion that job creation and the environment were not mutually exclusive. Indeed, he is still taking a lot of flack for that position.

But it looks like the Vice President was right. Others have testified to the economic scope and strength of the environmental technology industry in the United States, and the enormous markets for American goods and services in the developing nations in the former Soviet Union.

Perhaps several examples from my own industry can further illustrate this matter and clarify the need for this proposed legislation. Our industry, the geothermal industry, drills wells at selected locations primarily in Western States, seeking the clean natural heat of the Earth. When we discover steam, we harness it to produce very clean electricity.

In fact, geothermal energy is much cleaner than other traditional forms of energy, such as oil, nuclear and natural gas. The domestic geothermal industry is larger than is generally recognized, with about 2,500 megawatts of plant capacity in place. That is sufficient power for about 2.5 million Americans.

Some are of the opinion that the industry could double in size in the United States in the next decade. A doubling in size would

stimulate about $7.5 billion in new, clean power infrastructure development by private industry in the United States. The annual tax base increases alone from such growth could exceed $122 million per year, and often, a lot of that would go to remote communities already suffering economic hardship.

Further, such growth in geothermal power output would be good for the environment. It is estimate that doubling geothermal capacity would eliminate SO_x pollution of the air by about 130,000 tons per years compared to coal-fire generation, or about 4.6 million tons of CO_2 per year compared to methane natural gas fire generation.

Today, as a result of population growth and closure of the Trojan Nuclear Plant in Oregon for safety, cost, and environmental reasons, that region has an opportunity to gain many benefits for geothermal replacement power for the first time in the Pacific Northwest, as well as a new round of geothermal growth now getting underway in California and Nevada.

Internationally, the industry is about double the capacity now in place in the United States. However, growth abroad of clean, green geothermal energy will offer even more market opportunities abroad than in the United States. This is as a result of fast economic growth, high-demand growth for new power in the developing economies, and widespread power industry privatization. It will also be driven by nuclear plant problems in other nations.

According to the Wall Street Journal article of yesterday, which I ask be made a part of the record of this proceeding, and I have attached it to my remarks, the "dangerous Chernobyl-type reactors," in the former Soviet Union are not the only nuclear plant problems. The article says, in part, "New plants are exhibiting generic flaws that can lead to leakage of radioactive materials and high expenses for repairs."

Also, the article goes on to say, "Meanwhile, according to a study proposal for the July Group of Seven summit meeting this year"—that is in a separate study—"the lowest cost and lowest-risk option is to shut them down and turn to other energy sources."

I would suggest that this Nation and its private companies should be doing all we can to assist the former Soviet Union in replacing unsafe nuclear plants with geothermal and other forms of green power. It would also be very good for business.

Our domestic industry is a world leader in the development of geothermal power in the United States, and primarily in the Philippines abroad. We had considerably less success to date in the development of geothermal in other countries around the world. And it is pretty clear that a significant competitive problem arises from government-private industry collaborations by other countries, which specifically target geothermal market opportunities in other nations for their home-based companies.

Like other heavy industries, when a geothermal development firm gains a project abroad, it uses many goods and services of many other domestic suppliers, including power plant equipment and drilling equipment and services. It is good for many segments of American business. This legislation could do much to focus and coordinate national efforts upon the export of American environ-

mental technology, goods, and services in the developing world and former Soviet Union.

Our firm and the Oregon Environmental Technology Association and the EBC support this legislation very strongly. Finally, we favor the regional environmental business center initiative in the legislation. In fact, there is even a defense conversion aspect. Our company, the University of California, and many others on the west coast favor the establishment of a regional environmental business center at the Presidio in California, in San Francisco, as well as at other locations. We think it is a fine idea and wholly support the concept, along with a senior environmental service corps.

A clean environment is our business. After all, as someone said, "our customer is the planet."

That concludes my testimony with respect to S. 1074, Mr. Chairman. I would be happy to answer questions.

Senator KERRY. Thank you very much, Mr. Munson.

Let me try to remind everybody, if you can, try to hold to 5 minutes. It will give us more time to be able to have a little discussion afterward. Otherwise, we are going to run tight on that.

Mr. Petrillo, thank you.

I want to thank all the folks who have come down from Massachusetts to be here, some of whom have testified previously at other hearings. We appreciate Stone & Webster's efforts, and thanks for taking the time.

STATEMENT OF JOSEPH PETRILLO, VICE PRESIDENT AND WORLDWIDE ENVIRONMENTAL BUSINESS MARKETING MANAGER, STONE & WEBSTER

Mr. PETRILLO. Thank you, Mr. Chairman.

I appreciate the opportunity to present testimony at this hearing in support of the proposed National Environmental Trade Development Act of 1993. The bill addresses technology issues which are of great importance not only to the country, but the U.S. environmental industry.

I would like to briefly present to you the perspective of our company and why we support this bill. I will only make a few key points. Other comments and suggestions are summarized in my written testimony.

Founded in 1889, Stone & Webster provides planning, consulting, engineering, design, construction, and a full range of environmental services for a wide variety of projects throughout the world. I have been working in the environmental consulting business for Stone & Webster for the past 25 years. We have long recognized the strategic importance that technology plays in the international marketplace. Environmental technology is no different, and its role in addressing global environmental issues is becoming increasingly important.

Mr. Chairman, projected increases in world population over the next 30 years, in concert with an improved standard of living for many people in developing countries, will place severe constraints on our global natural resources. Achieving sustainable development will depend, to a large extent, on our ability to develop and utilize

new environmental technology. The United States can and should take a world leadership role in this effort.

The need for environmental technology is increasing in response to worldwide demand—a demand which the U.S. regulatory vision over the past 25 years has interestingly enough helped to create. Although we still maintain a 40-percent share of the estimated $200 billion environmental market, the U.S. lead in technology is slowly eroding, and we are losing market share when we should be capitalizing on this growing and important international opportunity.

The specific intent of this bill, which we strongly support, is to promote the export of U.S. environmental technology and ensure that the United States maintains a preeminent position in the global environmental marketplace. Our experience in developing technology in the petrochemicals and refining industry, as one example, has placed us in a strong position overseas. We have recently sold our technologies to clients in Mexico, Korea, Thailand, Scotland, and China just to name a few countries.

Pollution prevention, specifically, source reduction and energy efficiency, as mentioned several times in the proposed bill, should be the cornerstone of U.S. environmental technology policy. Indeed, inclusion of such technology will create a win-win situation for potential customers, where improved environmental and economic performance go hand in hand.

Over the last few years, we have been involved in a number of initiatives which have contributed to a national approach which focuses on a cooperative effort between the public and privates sectors to overcome barriers associated with the implementation of new environmental technologies. In fact, Senator, we recently testified before the Senate Environment and Public Works Committee in support of the National Environmental Technology Act, a bill which I believe you cosponsored. Clearly, these barriers to new technology development need to be addressed in order for the United States to maintain and expand upon a strong technology export base. Otherwise, we will not be competitive overseas in the future.

Gaining access to international markets is a time consuming and expensive proposition, particularly for small- and medium-sized companies. Large companies generally have the wherewithal, in terms of resources and know-how to pursue international opportunities. Typically, international projects are bid through consortia or alliances involving a number of companies from a number of countries. In all cases, teaming with local contractors and consultants is required.

We believe the principal issues which should be addressed to export environmental technology abroad should include but are not limited to the following: one, the ability to make potential customers aware of U.S. technology; two, the ability to make day-to-day contact with customers on behalf of U.S. environmental technology providers; three, we need to be aware of the competitiveness and appropriateness of U.S. technologies for a particular situation; four, we need to be concerned about license and patent protection in some countries; five, we need to understand local regulatory requirements and trends in those requirements; six, alliances and teaming with local contractors and consultants is essential; seven,

we also need a basic understanding of the local infrastructure in many countries; and, eight, there are external diplomatic and economic pressures from other countries that we need to be aware of.

The proposed bill addresses many of these issues. For example, using the staff of the Foreign Commercial Service and the Peace Corps as proactive marketeers, and incorporating industry into this new council are very important steps. I will tell you that market intelligence for international activities is absolutely essential.

Now, in the interest of time, Senator, I have included more detailed comments in my testimony, which I have submitted for the record.

In conclusion, I would like to express our support for this bill. We are confident that the proposed legislation will not only maintain our environmental industry as the world's recognized leader and preeminent provider of state-of-the-art, cost-effective environmental technology, but it will also ensure that this technology is brought to bear to address the world's critical environmental issues.

Thank you, Senator.

[The prepared statement of Mr. Petrillo follows:]

PREPARED STATEMENT OF JOSEPH L. PETRILLO

My name is Joseph Petrillo and I am Vice President and worldwide Environmental Business Marketing Manager for Stone & Webster Engineering Corporation in Boston Massachusetts.

I appreciate the opportunity to present testimony at this hearing in support of bill (S. 1074) which is entitled "The National Environmental Trade Development Act of 1993". This bill incorporates a comprehensive set of policies and programs to address global environmental protection issues by promoting the export and use of US environmental technology. Stone & Webster has been and continues to be a technology oriented company, and believes that this bill will have far-reaching and positive impacts on both the global environment and the US environmental industry.

I would like to briefly review the activities of our company, discuss the role that we see technology playing in the international environmental marketplace, identify potential barriers to the export of US environmental technology, and highlight the important aspects of the proposed legislation which support international actions taken at the United Nations Conference on Environment and Development and will help the US environmental industry gain global competitive advantage.

STONE & WEBSTER ENGINEERING CORPORATION

Stone & Webster provides planning, consulting, engineering, design, and construction services for petrochemical, refining, power, industrial, governmental, transportation, water resources and environmental projects throughout the world. Founded in 1889, Stone & Webster has a interdisciplinary professional staff of over 6000 engineers, scientists and planners located in offices in North America, Europe, the Middle East and the Pacific Rim. Over 12,000 projects including many pioneering developments have been completed successfully in all geographic areas of the world. Over the past five years, Stone & Webster has been responsible for projects having an aggregate value in excess of $20 billion.

In 1970, we were the first major engineering and construction company to integrate environmental engineering and sciences as part of our full service capabilities to address the needs of our country. We have long recognized the strategic importance that technology and know-how play in the international marketplace. Environmental technology is no different, and its role in addressing global environmental issues is becoming increasingly important. To emphasize this point, our company established a major division called Stone & Webster Environmental Technology & Services. We currently have over 2000 professionals working on environmental related projects worldwide. The worldwide environmental market represents one of the most important near and long term business areas for our company.

THE NEED FOR ENVIRONMENTAL TECHNOLOGY IN THE INTERNATIONAL MARKETPLACE

Clearly, the worldwide market for environmental technologies, goods, and services is growing in response to increased regulatory pressures. These pressures are a di-

rect result of public concerns about the environment. Projected increases in world population over the next 30 years in concert with an improved standard of living in many of the developing countries will place severe constraints on our global natural resources. Achieving sustainable development will depend to a large extent on our ability to develop and utilize new environmental technology. The US can and should take a worldwide leadership role in this effort.

There are a wide variety of environmental related technologies and we support the broad definition of environmental technology in the proposed bill, particularly as it relates to source reduction and energy efficiency. Clearly, different technologies will apply in different parts of the world. In developing countries for example, renewable technologies hold considerable promise, one which can be promoted by the Peace Corps as described in Section 8 of the bill.

Over the last 25 years, the US Congress has enacted and USEPA has established a comprehensive set of laws and regulatory programs to address air and water quality; solid waste management and hazardous waste remediation. This regulatory program is second to none and is used by many countries as the model upon which to develop their environmental protection programs.

Increasingly stringent environmental standards are the principal driving force behind the development of new technology. Consequently, technology has become the centerpiece of the US industry's competitive response to achieving environmental compliance. Pollution control technologies in the US have evolved over the past 20 years to a point where they are the standard by which environmental technology is judged worldwide. We are now moving away from end-of-pipe technologies and focussing more attention on state-of-the-art cost-effective pollution prevention strategies. Once again, the US environmental industry is rising to meet this challenge and is establishing an international strategic benchmark in the area of pollution prevention technology.

The need for environmental technology is increasing in response to worldwide demand, a demand which the US regulatory vision, interestingly enough, helped to create. Although we still maintain a 40 percent share of this estimated $200 billion market, the US lead in environmental technology is eroding and we are losing market share when we should be capitalizing on this growing and important international opportunity.

We support the specific intent of this proposed bill which would promote the export of US environmental technology abroad and ensure that the US maintains a preeminent position in the global environmental marketplace. This bill will also provide much needed jobs and income for our citizens.

Let me give you a specific example of how taking a strong position in technology can help gain competitive advantage and achieve increased global market share. Over the past 50 years, our experience in developing innovative technology in the petrochemicals and refining industries has placed us in strong competitive position. We have recently sold our olefins and FCC technologies to clients in Mexico, Korea, Thailand, Scotland, and China to name a few. The reason for this success is clearly related to our technology position, a position which we continue to improve upon. We have been "greening" our petrochemicals and refining technologies over the past few years in response to our national pollution prevention program. Indeed, inclusion of such technology innovations has created a win-win situation for our customers where improved environmental and economic performance have come hand-in-hand.

In addition to developing "green" designs for our proprietary technologies, we are approaching the US and overseas environmental markets on two different strategic fronts. The first is partnering with large industrial companies whose principal business interest in developing innovative environmental technology is to solve internal environmental problems more effectively and not commercialize and market these technologies to others. We are pursuing these opportunities under exclusive licensing agreements to assist these companies in demonstrating, commercializing and promoting new technologies on a worldwide basis. Needless to say, the proposed bill will help us in identifying and pursuing opportunities to export these technologies and know-how abroad. More about that later in this testimony.

The second front is focussed on getting the public and private sectors to work together to facilitate the commercialization of new environmental technologies. This is the result of several strategic corporate initiatives which we undertook several years ago to address what we believed were barriers to implementation of new technologies. Over the last few years, these initiatives contributed to a national approach by which the public and private sectors might cooperate to overcome some of these barriers.

We recently testified before the Senate Environment and Public Works Committee in support of the National Environmental Technology Act of 1993. We believe that

this bill would create some of the mechanisms necessary for the types of technology demonstration and evaluation efforts necessary for successful implementation of new environmental technologies in the US which would then become part of our US environmental technology export base. Our efforts in this matter appear to be complimentary to the intent of the proposed bill.

POTENTIAL BARRIERS TO THE EXPORT OF ENVIRONMENTAL TECHNOLOGIES

Gaining access to international markets is a time consuming and expensive proposition particularly for small and medium size companies. Large companies generally have the wherewithal in terms resources and know-how to pursue international opportunities. Typically, international projects are bid through consortia or alliances involving a number of companies. In all cases, teaming with a local contractor is required.

We believe that the principal issues which should be addressed to export environmental technology abroad include but are not limited to the following:

- Ability to make potential customers aware of US environmental technologies
- Ability to make day to day contact with customers on behalf of US technology providers
- The competitiveness and appropriateness of specific technologies
- License and patent protection in some countries
- Local regulatory requirements and trends
- Alliances and teaming with local contractors and consultants
- Basic understanding of the local infrastructure
- Diplomatic and economic pressures from other countries

The proposed bill addresses many of these issues as described more fully in the following section.

IMPACTS OF THE PROPOSED LEGISLATION

The intent of the proposed bill is to promote the export of US environmental technology abroad to assist in achieving global environmental protection. In our view, the bill's provisions will have a positive impact on and give a needed stimulus to the US environmental industry. This is consistent with President Clinton's Earth Day address in which he stressed the importance of the US maintaining its position as the leading innovator of new environmental technologies. The bill would create a public-private partnership which relies on the private sector to provide the requisite technology while the public sector, specifically the Department of Commerce, would provide technical assistance in the form of marketing and distribution liaison and coordination abroad. We fully support the proposed public-private partnership based on our ongoing activities with DOE, DOD, EPA and the private sector to facilitate the implementation of new environmental technologies.

We are particularly enthusiastic about several initiatives and programs in the proposed bill. Specifically, we believe that designating components of the Department of Commerce, namely, the National Oceanic and Atmospheric Administration, the United States and Foreign Commercial Service and the International Trade Administration, to play a major role in the implementation of a coordinated national strategy to increase exports of US environmental technology is a very positive step in support of the US environmental industry.

The Foreign Commercial Service "1-stop shops" as described in Section 5 will provide critically important marketing intelligence on international opportunities to US environmental companies. Gathering international marketing intelligence on a timely basis is often times difficult, time consuming and expensive particularly for small and medium size companies. This intelligence would include but not be limited to identifying specific opportunities, local regulatory trends, and potential teaming partners. Although the specific responsibilities of the Regional Environmental Business and Technology Cooperation Centers will differ from those of the "1-stop shops" under the Foreign Commercial Service, they focus on what we believe is one of the most important features of the proposed bill namely, access to market intelligence; technology transfer and technical assistance; and business to business contacts.

We fully support the establishment of the proposed Environmental Trade Promotion Council in Section 6 in terms of its membership diversity. We believe that the proposed industry representation will provide needed balance and ensure that all viewpoints are included in the Council's strategic planning process. Furthermore, I am sure that industry will work closely with the Council to identify appropriate guidelines to facilitate federal actions to increase US environmental technology exports.

We support the creation of the American and Environmental Business Centers (which would be authorized under the provisions of Section 9) in those countries

which are determined to offer the best prospects for the US environmental industry. We are particularly supportive of the emphasis placed on the private sector role in providing the necessary input to the Department of Commerce in making these determinations.

Finally, we suggest that you consider promoting and show-casing US environmental technology by arranging for several international innovative technology demonstration projects in strategically important countries. This could be accomplished in concert with the provisions of Section 9.

CONCLUSIONS

In conclusion, I would like to express our support for this bill. We are confident that the proposed legislation will not only maintain our environmental industry as the world's recognized leader and preeminent provider of state-of-the-art environmental technology and services but it will also ensure that this technology and expertise is brought to bear to address the world's critical environmental issues.

Senator KERRY. Thank you very much, Mr. Petrillo. I appreciate that. And all statements will be placed in the record in full, as if read, in addition to any other materials you may have.

Mr. Driscoll, thank you for being here and thank you also for your outstanding leadership as the founding president of the Business Council. Also, the work you have done with Mr. Connors has been central to getting the Council off and running as effectively as I think it is. And we appreciate that enormously.

STATEMENT OF JACK DRISCOLL, PRESIDENT, HNU SYSTEMS, INC.

Mr. DRISCOLL. Thank you very much.

I am happy to be here this morning to talk a little about some of our export activities and supporting S. 1074. I did not have time to prepare written remarks, but I will send those in early next week.

HNU Systems is a manufacturer of environmental monitoring instrumentation. We employ about 250 people. And more than 50 percent of the instruments we produce are exported to about 30 countries around the world. Our largest markets are Japan, Germany, the United Kingdom, Latin America, including Mexico, Canada, and Central Europe, and the CIS.

If we look at the Japan example, Japan is a market that I worked on personally. I went over there many times in the eighties, and it really was not until about 1987 that we had any real success. And what we did is we made an investment of probably about $25,000 to go to a trade show in Japan in 1987. We were the only—there was only one other U.S. company, and that was a billion dollar company—but we were the only small U.S. manufacturer at this particular trade show.

The interesting thing about this is there were 20 British companies at this show. The Government of the United Kingdom paid 50 percent of the airfare and expenses, and then provided low-cost—in fact, no cost for the interpreters—and a low-cost booth. Their total cost for attending the show was $5,000. So, any small- or medium-size businessmen that is interested in exporting and getting into an important market like Japan probably might think a couple of times about spending $5,000. They might think very, very seriously about spending $25,000.

And I think that is one of the things that really can be helped with some of the legislation that you are proposing.

There was a trade show last week in Japan, and some Japanese equipment was shown there. And this is basically a mobile, really, or a portable incineration system for hazardous waste. And probably the most important part of it, as far as I am concerned, is the fact that our instrument is incorporated into this. And so it is an integral part of the system. And when they compared our technology to the technology that was available in Japan, they chose ours. It is better technology. It worked better. And with the Japanese yen-dollar relationship, it was also actually less expensive than some of the Japanese equipment.

So, there are a lot of opportunities, but we do have to get companies exporting.

Again, we were one of the handful of U.S. companies in Rio last June. And one of the things you could see there is the fact that certainly the environmental market is a global market, and it is a good opportunity, but only if we get our act together.

The trade advisory board that you are talking about putting together with private sector participation is strongly endorsed. I think this is absolutely essential. It is a large step forward and a key part of the plan. And I think the input from the private sector is a must. In fact, I feel that private sector participation will determine the success or failure of this particular board.

If we get very strong participation from the private sector, I think this thing will really be a winner. And if we do not get that strong participation it will be like every other one of these boards that is put together. So that is why I feel very strongly about it.

The United States represented probably, as we have heard, about 40 percent of the world market in environmental goods and services in 1992. But probably within 5 years, that could be less than 30 percent. And this is as a result of the some of the developing markets, or the developing countries, basically, starting to buy environmental goods and services.

We are just going to have to work hard to maintain the lead that we presently have. And, again, I note the lack of response of the U.S. environmental businesses as the Earth Summit. I think the establishment of environmental business centers is an excellent first step in helping us maintain the U.S. lead, and not turn it over to the Germans or the Japanese.

As Michael Porter has noted, early exporters become international leaders. Regional environmental business centers in the United States are very important because industry partnering is very difficult to develop, but it is very necessary doing international business, as we heard the previous speaker talk about. It cannot be done with just a conference and a few phone calls.

At the EBC in New England, we have been able to get a number of companies, 15 or 20, working together in the Mexican market. And I think Joan Gardner is going to talk a little bit about her activities there. But we also have an initiative going on in Poland to help with some of the potable water problem they have in Poland. And this was basically developed through contacts at a conference that we made in Boston last fall. We have a local engineering company that will take the lead and then bring in other small businesses.

The thing that is interesting about this is we had a lot of participation from local government agencies, such as MassPort, the Massachusetts Office of Environmental Affairs, and MWRA. All of these agencies were a significant help with this project. And, again, it is the government-industry participation that is so important and so key. And this is what other countries do so well.

So, we have to get the Government and industry working together and developing the markets if we are going to succeed.

If we look at the senior environmental corps, I think this can provide more people out there giving the message about U.S. environmental technology. And it is something that we really need. If we look at markets that Japan is really interested in getting in and focusing on, I mean, Indonesia is a key part of Japan's strategy. Japan has 500 people working in Indonesia, and probably three-quarters of these people are working in the government.

So, like I say, this bill is definitely on the right track.

Senator Kerry, I want to thank you for your kind remarks about EBC this morning, and also, unexpectedly, at the South Shore Chamber breakfast on Monday morning.

Thank you very much.

Senator KERRY. Thank you very much. I appreciate it, Mr. Driscoll.

Mr. Bielsky, we are glad to have a Fortune 500 company represented here. I think it is a good perspective to get. And so we appreciate very much your taking time to be here.

STATEMENT OF HYMAN BIELSKY, SENIOR VICE PRESIDENT AND GENERAL COUNSEL, SAFETY-KLEEN CORP.

Mr. BIELSKY. Thank you very much, Senator.

I am the senior vice president and general counsel of Safety-Kleen Corp., which, as you mentioned, is a Fortune 500 New York Stock Exchange Co. We currently serve approximately 500,000 customers in the United States and overseas. We employ 5,700 people in the United States and about 1,600 overseas. I do not have the numbers of customers overseas, but you can tell that they are a significant number of customers.

At the outset, Safety-Kleen would like to applaud the efforts of the Senate and, in particular, your leadership in focusing upon the business development opportunities overseas for U.S. environmental companies. We are fortunate to be currently operating overseas in a number of countries through wholly owned subsidiaries in the United Kingdom, Ireland, Spain, France, Belgium, Germany, and through licenses in places like Hong Kong, Taiwan, Korea, Singapore, Israel, Australia, and New Zealand.

I would like to confirm some of the remarks Mr. Petrillo made about how expensive and time consuming it is—and, indeed, it is time consuming for large companies as well as small companies—it is a very difficult operating environment for environmental companies. Our revenues from our European and foreign operations were about $138 million in 1992, which is about 17 percent of our revenues.

Our company offers basic solvent recycling services, primarily the small quantity generators, which are little or smaller businesses. And what we have found is that to do the business efficiently, you

have to have a geographically dispersed network collecting very small quantities of waste from many customers. The need for that branch network creates a variety of difficulties right now, especially in Western Europe, because of the differing regulations that apply in the various countries.

We are hopeful that through this bill some effort can be made in helping those countries to focus on the need for consistent and predictable regulation. We have found that it is extremely difficult to transport waste throughout various countries in Western Europe. In some countries, the waste may be categorized as hazardous, whereas it is not hazardous in other countries. And we have also found that it is difficult in certain of these countries because market opportunities are taken over by governmental entities.

For example, in Germany, I believe the hazardous waste incinerators are all owned by the government. Most of the disposal facilities in the Netherlands and Northern Europe are also owned by the government.

In Spain, for example, used oil is recycled by the government. That is a business that we are in.

So, we are being foreclosed in some of our market opportunities by the government taking over the lead.

As I said, we encounter particular problems in the regulatory environment overseas. We are confident that the recycling technologies that we bring to bear are environmentally beneficial and that the consumers in the overseas market would benefit from using those services.

Safety-Kleen's experience has shown that the export of environmental services and products represents a significant opportunity for U.S. firms, albeit one that requires significant time and resources to achieve success. We believe it is imperative that the U.S. Government work with foreign governments in an attempt to harmonize the environmental regulations among countries. The differences among the regulations found in the different countries create a major barrier to the entry to companies that wish to sell environmental technology products or services in more than one country.

Safety-Kleen believes that the United States, as the world's leader in the establishment of environmental regulations and progress, should share its expertise and use its influence to encourage consistency and predictability.

One further point that I would encourage the Senate to look into and to focus upon is the need not just in the things you would consider as high-tech environmental technologies, but in service technologies. As I mentioned, we currently have 1,600 representatives, many of whom are driving trucks throughout Western Europe and Asia, picking up small quantities of waste. It is not a high-technology job, but it is a job that has to be done. It has to be done efficiently. And we would encourage the Senate's efforts, its broad-standing efforts, to focus upon all of these problems.

Thank you.

[The prepared statement of Mr. Bielsky follows:]

PREPARED STATEMENT OF HYMAN BIELSKY

My name is Hyman Bielsky and I am Senior Vice President and General Counsel for Safety-Kleen Corp. I am here to testify on behalf of Safety-Kleen Corporation in regard to "The National Environmental Trade Development Act of 1993." Safety-Kleen's corporate offices are located at 1000 North Randall Road, Elgin, Illinois, 60123.

Safety-Kleen applauds the efforts of the Senate and in particular the leadership of Senator Kerry in focusing on the great potential for business development in foreign markets for U.S. environmental companies. Safety-Kleen is the world's largest recycler of contaminated fluids and liquid industrial wastes and has built a significant presence in foreign markets by providing these services. We are also the world's largest re-refiners of used oil to virgin quality products.

Safety-Kleen serves more than 500,000 customers world wide; therefore, we provide essential environmental services to small businesses of varied types. We currently employ approximately 5,700 persons in the U.S. at almost 200 locations. An additional 1,600 are employed overseas and in Canada at more than 100 locations. Countries in which we own facilities include: the United Kingdom, Ireland, Italy, France, Germany, Belgium and Spain. We also license our services in Japan, Korea, Singapore, Taiwan, Hong Kong, New Zealand, Australia and Israel. Revenues from our European and Canadian operations in fiscal 1992 were $138 million. This amount comprised more than 17 percent of our total corporate revenues in 1992.

Safety-Kleen believes that our presence in foreign markets strengthens both our U.S business and the contribution that Safety-Kleen makes to the U.S. economy. Additionally, we believe that our reclamation of hazardous and other industrial wastes enhances the business climates and the quality of life in the locations that we serve by helping to protect human health and the environment from the consequences of improper management of liquid industrial wastes.

Safety-Kleen offers its basic solvent recycling services in the U.S. and foreign markets. Both in the U.S. and Canada and overseas Safety-Kleen specializes in picking up and recycling liquid wastes from automotive, industrial and other commercial customers, most of which are small quantity generators. The key to our success is our unique network of Branch service centers. Wastes are brought to these Branch service centers from customers within the geographical area of the Branch, and are then shipped to regional Recycle Centers for reclamation. Safety-Kleen has 179 Branch Service Centers in the U.S. and Canada and 104 international Branches. Wastes are processed at our 16 Recycle Centers—three of which are located overseas. We also operate two used oil re-refineries, one in Breslau, Ontario, and one in East Chicago, Indiana. Our East Chicago re-refinery is the largest such facility in the world and utilizes technology that is significantly advanced compared to that used in other parts of the world. Last year we re-refined over 110 million gallons of used oil into products, such as lube stocks, which are returned to the marketplace for re-use.

Serving the many small generators which use solvents and other common industrial liquid wastes requires the establishment of a Branch network. This level of involvement in a foreign market is difficult to achieve and our expansion into these markets did not come easily. We have been working on this process for more than fifteen years. In order to penetrate foreign markets successfully, we initially had to provide our services through franchising and licensing arrangements. We still transact business in Asia through such arrangements. In Europe we passed through the franchising and licensing stage and progressed to partial ownership of the Branch facilities. Over the past few years we have purchased the outstanding interests in many of these facilities and at this time, most of the Safety-Kleen Facilities in Europe are wholly owned by Safety-Kleen Corp. Safety-Kleen's future plans include offering additional services in our foreign markets that we now commonly offer in the U.S. and Canada, such as the re-refining of oil and environmentally-sound recycling of specialized solvents.

We have encountered some problems in expanding our services abroad. There is wide variation from country to country in terms of regulations and enforcement. Transporting wastes from one country to another requires attention to the different regulations in each country and, in some cases, these differing regulations, rather than routine business judgment, have driven our decisions as to where we have located our facilities. Additionally, regulations in some of the European countries require local or national government involvement or control of waste disposal and, in a few cases, of other aspects of waste management. Government control of portions of waste management has an impact on the manner in which we must conduct our business and the markets in which we can compete. Despite theme obstacles, however, we find that foreign businesses want to use our environmentally-sound recy-

cling services. We support the provisions in Bill S1074 that would aid U.S. companies in obtaining information on market data and environmental regulations in specified foreign countries.

One of the reasons for Safety-Kleen's success is the appropriate level of technology of our services. We provide environmentally-sound solvent recycling for industrial and commercial customers, many of which are small-quantity generators that cannot afford to treat or recycle their own wastes. This basic service and technology is recognized as desirable, even in countries that do not have the advanced environmental regulatory structure that we enjoy in the U.S.

Safety-Kleen is also committed to bringing new technologies to the marketplace both in the U.S. and Canada and overseas. Safety-Kleen supports efforts to minimize the generation of hazardous wastes and has developed new non-hazardous parts cleaning solutions that can be used in place of other hazardous materials. This service represents a significant breakthrough in waste minimization. Additionally, we have begun plans to use our branch collection system in the U.S. to collect other wastes, such as wastes from photo processing, which contain toxic amounts of silver, and wastes generated by photocopiers. Safety-Kleen's collection and treatment of such wastes will keep them out of U.S. landfills and water supplies.

Safety-Kleen hopes to introduce this new solvent and the processing of these new waste streams in at least some of our foreign markets, as well. In some cases it will be necessary to stimulate demand for these services through extensive educational campaigns to convey the benefits to the environment of theme new services. Educational efforts supported by the U.S. government such as those proposed in Bill S1074 will help stimulate the demand for these and other environmental services that can be provided by U.S. companies.

Safety-Kleen believes that the U.S. government should encourage the development of environmentally sound recycling and reclamation techniques as well as waste minimization techniques such as those that have been developed or are being employed by Safety-Kleen Corp. We believe that environmentally sound recycling technologies are appropriate services for U.S. businesses to export to foreign markets and that they help protect human health and the environment by reducing the total amount of wastes that are disposed of. In many cases, recycling is a best available technology, particularly in countries that do not possess environmental regulations that are as well developed as those found in the U.S. Thus, both the business opportunities and the benefits to human health and the environment are considerable from recycling/reclamation technologies as well as from other environmental management technologies and services.

Safety-Kleen's experience has shown that the export of environmental services and products represents a significant opportunity for U.S. firms, albeit one that requires time and resources to achieve success. Both Safety-Kleen and the Environmental Business Council, of which Safety-Kleen is a founding member, hold that U.S. businesses and the economy are benefited by a presence in international markets. This benefit flows through to U.S. residents and the government in the form of additional jobs to manage the international component of businesses and the subsequent tax revenues. As a result, Safety-Kleen applauds and supports Senator Kerry and the sponsors of S. 1074 for focusing the federal government's diverse resources on this key issue. We believe that a primary benefit of the bill and of the efforts already underway to ensure the coordination of the many federal agencies that can impact this problem and providing a clear voice in the process for those of us in industry. This provess will yield ideas for programs to encourage both the sale of goods and services and foreign direct investment by U.S. firms in foreign countries.

Safety-Kleen also believes that it is imperative that the U.S. government work with foreign governments to attempt to "harmonize" environmental regulations among the countries. The differences among the regulations found in different countries create a major barrier to entry to companies that wish to sell environmental technology products or services in more than one country. The pervasive message of the United Nations Conference on Environment and development held last year in Rio de Janeiro was that many countries now perceive the need to address environmental issues that stretch beyond national borders. Safety-Kleen believes that the U.S., as the world's leader in the establishment of environmental regulations and programs, should share its expertise and use its influence to encourage consistency and predictability in regard to other countries' environmental regulations. Such actions, some of which are delineated in the draft bill, would create a major advantage for U.S. envirotecbnical firms seeking to enter international markets.

Safety-Kleen is committed to providing environmentally sound solvent and industrial waste recycling services to all of its customers worldwide. These services provide enormous value to human health and the environment wherever they are pro-

vided. Additionally, our presence in foreign markets enhances our contribution to the U.S. economy. We applaud Senator Kerry and the Committee and pledge to be a resource to you and to the Administration to help develop a strategy in this important area.

Senator KERRY. Thank you very much, Mr. Bielsky.

Mr. Routhier, thank you for being back with us. We are on the back end of a vote here. I am just trying to think whether we can get your testimony in before I go vote or not. Probably not.

Why do we not just take a brief recess here, and I will get back as quickly as I can from this vote, and then we will pick up. Thank you all.

[A brief recess was taken.]

Senator KERRY. The hearing will come back to order, and we will try to proceed as rapidly as we can. I really appreciate your patience. I am also going to be a little pressed on the back end of this, so we need to try to wrap it up.

Mr. Routhier.

STATEMENT OF J.P. ROUTHIER, OWNER, J.P. ROUTHIER & SONS

Mr. ROUTHIER. Mr. Chairman, I want to thank you for the kind invitation to appear before you today and share the story of my company's success.

Please allow me to introduce myself. My name is J. Paul Routhier of J.P. Routhier & Sons, a tire recycling, site cleanup, and transportation company located in Littleton, MA.

As you hear the history of our origin and learn of our plans for the future, I hope my remarks may serve as a leading example and guiding principle to all who seek to demonstrate that protecting the environment and stimulating the economy are not mutually exclusive, but positively beneficial, as both goals can be concurrently served and successfully promoted.

Nearly 3 years ago, in late 1990, after two decades in the transportation business, I decided to explore tire recycling, realizing that countless tires were being illegally dumped and discarded, degrading our environment and posing a serious threat to the public health. I recognized, further, the possibility of finding a way to turn seemingly useless and potentially hazardous refuse into a product with boundless positive applications.

Up until recently, the disposal of used tires has been a serious problem as tires have been dumped into lakes, streams and rivers, and have clogged our sanitary landfills. Pools of water collecting inside piles of discarded tires cause dangerous mosquito infestations. Illegally dumped tires litter the landscape and tire fires pollute the atmosphere.

The challenge was to find a way to convert an environmental hazard and public nuisance into a reusable product. Our company achieved this goal by developing a tire recycling division—a 100-percent recycling program, using state-of-the-art technology.

We currently process approximately 2.5 million tires annually, operating under a permit issued by the Massachusetts Department of Environmental Protection. Each tire goes through a culling procedure, where its steel rims and inner tubes are removed. The tires

are then shredded into 2-inch chips, and shredded further into 1-inch chips.

These chips are marketed as tire-derived fuel for paper mills, and as tire-derived products, such as rubberized asphalt and drainage systems.

Inner tubes are sold to be reprocessed in the rubber industry, while steel rims are shipped to foundries to be melted down and reprocessed for new use in the steel industry.

Our company offers on- and offsite cleanups, collects tires at the customer's location, supplies transportation, and provides trailers and container rentals, focusing on customer convenience.

We continually seek to increase efficiency through new and better methods. We regularly upgrade our equipment and refine our techniques, keeping us on the leading edge in recycling technology. Future generations depend on responsible waste management, and at our company, we take pride in our work and look forward to making Massachusetts, the country and the world a cleaner, safer, and better place to live.

I am both a businessman and an environmentalist. And, as we approach the next century, more of us can and must be both.

At our company, we are dedicated to community-oriented projects and regularly host tours for schools, government groups, and civic associations. We talk with school children and local organizations and work with college students involved in research projects linked to recycling.

While our company has been honored for our work, we are most proud of our most recent accolade, the 1993 Worcester Environmental Award given by the Worcester Business Journal and the Massachusetts Audubon Society. We were doubly honored to have it presented to us by our distinguished Senator, the Hon. John Kerry.

The award has a special meaning for us because for the first time it was given not for a company's internal efforts to recycle, but to promote the notion that recycling can be a business that, in their words, "will make money, create jobs, pay taxes, and help the economy."

Business must look to the future. Enterprise should not only mean discovering and marketing something new, but should mean taking something no one wants, needs or can use and turning it into something useful, helpful or necessary, or, failing that, returning a resource to its origin.

We have before us a tremendous opportunity for further expansion not just within our borders, but around the world. We have the potential to protect the environment and expand our economy in the global marketplace—from emerging Third World countries to the former Soviet bloc.

We must not squander opportunities that are waiting to be explored—and the U.S. Congress has the ability to contribute to the further success of our industry. One of the major obstacles to environmental remediation and recycling operation is the complexity of existing regulations. It is difficult to implement technically feasible recycling in many cases because of resistance by regulators.

Most of the new jobs created in recent years have come from small businesses. This will continue to be true through the 1990's

and beyond. For this reason, the Government should take special measures to help small business gain access to overseas markets.

Small businesses do not have the resources for travel, information networks, and marketing agents. Helping them identify and establish contacts will help create new jobs.

Small businesses also need working capital and lines of credit. Traditional financial services for companies in the environmental remediation and recycling industries are not readily available. And these are the areas of the environmental industry with the greatest growth potential.

Mechanisms to encourage loans and venture capital to small environmental companies are critical. In addition, Congress should consider tax credits to companies that train workers and professionals from those industries with declining demand for work in the environmental field, with its potential for boundless expansion.

I respectfully request you to consider fully some of these suggestions so that together, by practical example, we can exhibit a profound respect for the environment and contribute to the stewardship of our natural resources, while showing current businesses and future generations the importance of recognizing our responsibility to respect the environment and ensure its survival.

Thank you for your time, your interest and consideration. And I do support your bill, S. 1074.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Routhier follows:]

PREPARED STATEMENT OF J.P. ROUTHIER

I want to thank you for your kind invitation to appear before you today and share the story of my company's success.

Please allow me to introduce myself. My name is J.P. Routhier of J.P. Routhier & Sons, Inc., a tire recycling, site clean-up and transportation company located in Littleton, Massachusetts.

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We continually seek to increase efficiency through new and better methods. We regularly upgrade our equipment and refine our techniques, keeping us on the leading edge in recycling technology. Future generations depend on responsible waste management, and at our company. We take pride in our work and look forward to making massachusetts, the country, and the world a cleaner, safer and better place to live.

I am both a businessman and an environmentalist. And, as we approach the next century, more of us can and must be both.

At our company. we are dedicated to community-oriented projects and regularly host tours for schools, government groups and civic associations. We talk with school children and local organizations and work with college students involved in research projects linked to recycling.

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We have before us a tremendous opportunity for further expansion, not just within our borders, but around the world. We have the potential to protect the environment and expand our economy in the global marketplace—from emerging Third World countries to the former soviet bloc.

We must not squander opportunities that are waiting to be explored—and the United States Congress has the ability to contribute to the further success of our industry.

One of the major obstacles to environmental remediation band recycling operations is the complexity of existing regulations. It is difficult to implement technically-feasible recycling in many cases because of resistance by regulators.

Most of the new jobs created in recent years have come from small businesses. This will continue to be true in the 1990s and beyond. For this reason, the government should take special measures to help small businesses gain access to overseas markets.

Small businesses do not have the resources for travel, information networks and marketing agents. Helping them identify and establish contacts will help create new jobs.

Small businesses also need working capital and lines of credit. Traditional financial services for companies in the environmental remediation and recycling industries are not readily available. And these are the areas of the environmental industry with the greatest growth potential.

Mechanisms to encourage loans and venture capital to small environmental companies are critical. In addition, Congress should consider tax credits to companies that train workers and professionals from those industries with declining demand for work in the environmental field with its potential for boundless expansion.

I respectfully request you to consider fully some of these suggestions so that together, by practical example, we can exhibit a profound respect for the environment and contribute to the stewardship of our natural resources, while showing current businesses and future generations the importance of recognizing our responsibility to respect the environment and insure its survival.

Thank you for your time, interest and consideration.

["Where the Rubber Meets the Road," by Katherine S. Robertson in the April 26–May 9, 1993 Worcester Business Journal and "Scrap Tire Recycling" may be found in the committee's files.]

Senator KERRY. Thank you very much, Mr. Routhier. I appreciate enormously your coming down here. I know this is the first time you have ventured forth in a Senate hearing and testified, and I appreciate your comments, especially, but also I know the expense and everything that all of you go through to come here. It is very much appreciated.

Ms. Gardner.

STATEMENT OF JOAN GARDNER, PRESIDENT, APPLIED GEOGRAPHICS, INC.

Ms. GARDNER. Thank you, Mr. Chairman. I am Joan Gardner, president of Applied Geographics. And I think the other members of the panel here have covered many of the areas, so I would like to tell you a little bit about what Applied Geographics does.

We are a Boston-based firm. We are a woman-owned business. And we specialize in environmental and geographic information systems. The GIS is a computer system which relies on the integration of three distinct aspects of computer technology: data management of graphic and nongraphic data, routines for manipulating, displaying, and plotting graphic representation of the data, and algorithms and techniques that facilitate spatial analysis.

And this is a map—I am sorry it is folded over—of Fort Devens. But it shows some of the areas of Fort Devens—the landfill, the buildings are color coded. Those that are rust colored have known underground storage tanks associated with them. And all of the data represented graphically is backed up by tabular data.

I would like to go right to our adventures in Mexico. Through the Environmental Business Council, Applied Geographics went to a conference in Monterey a year ago in May, and as a result of that, we were invited to go to Mexico City. My husband and I have been to Mexico City 16 times in this past year, and he is there this week. I accompanied Governor Weld on his trade mission in December and, as a result, met a representative of a Mexican company called Grupo Gutsa, which had formed a joint venture with a British water company to bid on the privatization of the water and sewer system in Mexico City.

As a result of that meeting, I contacted Parsons Brinckerhoff, a U.S. company, and, together, we put together a bid to do the survey and mapping work necessary for the project. Since then, the Mexican-British joint venture has been awarded 5 of the 16 delegations—those are neighborhoods—in Mexico city, and expects to sign a contract with the national water commission before the end of this month.

Parsons Brinckerhoff and Applied Geographics expect to sign a contract shortly thereafter with the joint venture for the survey and mapping portion of the work. The total contract for Parsons and AGI is expected to be in the neighborhood of $6 million.

Parsons is an established international firm, but for Applied Geographics this is an extraordinary adventure. AGI is a 2-year-old company, 67 percent owned by me. Obviously, Mexico represents an enormous market for an emerging specialized technology firm.

In addition to this particular water project, AGI has signed an agreement with a Mexican engineering firm to jointly prepare environmental impact statements. SEDESOL has a requirement that

only firms approved by SEDESOL can conduct these studies. In order to be approved, a firm must have the technology and experience in these areas. And a joint venture with an American firm provides the experience and technology.

The Mexican Association of Environmental Engineers is obviously upset about this requirement. But I believe it demonstrates the Mexican Government's commitment to satisfying environmental concerns raised during the NAFTA discussions.

During our last trip to Mexico with this Mexican environmental engineering firm, we met with a chemical manufacturing firm located in Mexico City. They are locating that particular facility to a location outside of the valley, and the firm was very close to getting approval for that first plant relocation. The individual we met with indicated that in his company there were nine more facilities which are about to be relocated. The same individual said that his American customers had visited and discussed the new facility and its internal recycling processes to be sure that it met their requirements.

Clearly, this one firm is responding to the present environmental situation in Mexico City and investing major resources in relocating its facilities outside of this heavily polluted area to meet demands from American customers.

My husband is in Mexico today dealing with two specific projects. Just being in Mexico, we have become aware of potential business not only for Applied Geographics, but for larger firms. One is a proposal to a Mexican marketing firm for a turnkey GIS system. AGI would format the Mexican data, load it into the GIS system and provide training.

The other project came to us through our Mexican agent. He became aware of this project and asked if we knew of a firm which had the capacity to perform the work. We have contacted a much larger firm in the Cambridge area who has the capacity to do this project, which may have a small GIS component.

So, not only are we finding work for Applied Geographics, we are also identifying projects which need the capacity of much larger firms.

Thanks to our membership in the Environmental Business Council, we are able to make these connections.

During the past year on these trips to Mexico, I have been struck by the aggressive presence of the Canadian Government and its environmental firms. I spoke at Pro Eco 1993 in Monterey, Mexico, last month on AGI's work associated with the Fort Devens project. There were three EBC firms at the conference, and no more than six others from the United States. But Canada had just opened a trade office in Monterey, and there were a very strong Canadian presence at the conference.

And, as Jack indicated, the government sponsors the booth, and the private companies have an opportunity to be at the booth.

As a former local elected official with 9 years' experience, and a former State bureaucrat with 10 years' experience, I recognize the importance of input from the business sector in developing appropriate policy. I thought you might be interested in the details of some of our adventures in Mexico. All of this is the result of being a member of the Environmental Business Council.

Both Don Connors and especially Jack Driscoll have been very supportive of a new company, and I appreciate their interest and help.

One of the areas that Applied Geographics is especially interested in, in this defense conversion piece is the availability of data. And there is an incredible amount of data available for countries around the world. And if that data could somehow be made available for commercial uses, it would greatly enhance our ability to be effective in other countries.

I would be happy to answer any questions.

[The prepared statement of Ms. Gardner follows:]

PREPARED STATEMENT OF JOAN GARDNER

I am Joan Gardner, President of Applied Geographics, Inc. Thank you for inviting me to testify today. I would like to briefly describe my firm and the technology we use in conducting our service business, the issues of funding, and our experiences in Mexico this past year and some of the opportunities we are exploring.

APPLIED GEOGRAPHICS, INC.

AGI is a Boston based firm certified as a WBE/DBE which specializes in environmental and geographic information systems. I am the president. I would like to discuss two areas which are important to us in developing a successful business operation in Mexico: funding and data.

GENERAL BACKGROUND

The three principals, who began AGI, had worked for the Commonwealth of Massachusetts and were responsible for initiating what is now the MassGIS, a statewide, multilayer, multiuser geographic information system. GIS is a system which relies on the integration of three distinct aspects of computer technology:

1. data base management of graphic and non graphic data
2. routines for manipulating, displaying, and plotting graphic representation of the data
3. algorithm and techniques that facilitate spatial analysis

AGI was incorporated two years ago, in May of 1991, and opened for business on July 8 Today AGI a staff of 8, with contracts booked to date in the amount of $780,000.

FUNDING

In order to start the business, each of the three partners contributed funds in combination with a bank loan. During the process of certification as a WBE (woman owned business) a Vice President of the bank who testified on my behalf indicated that he believed AGI was a "very thin business proposition". I believe that his perception was formed because AGI is a service company and he was uncertain about the technology and the market opportunities which we described. Last week I attended a finance seminar sponsored by the EBC and most of the bankers indicated a reluctance to loan to small start-up service companies, never mind to a small start-up company marketing in a foreign country. As I will describe later, AGI is working on a project in Mexico City which will necessitate AGI's borrowing funds to cover the first three months of the project. My banker has indicated to me that at this time that there are no SBA funds available. Perhaps by the time we sign the contract there will be.

MARKETING IN MEXICO

For a small start-up firm the cost of marketing in a foreign country is substantial. Just to get there involves costs and communicating with home base is expensive. You must establish some local presence and have the funds to maintain that presence. Since may of 1992, my husband and I have made between us 16 trips to Mexico. Most of the costs involved with this travel are being carried by us personally, until we generate some income. The proposed American Business Centers and Environmental Business Centers will help in this area.

WHY MEXICO

The total market for public services, which include: water supply systems, sewage treatment systems, street maintenance, illumination systems and garbage collection, increased from 315.1 million USD in 1989 to 492.8 million USD in 1991. This represents an average growth rate of 25.1 percent. As a consequence of the renewal of public spending in urban development it is estimated that this market will reach 685 million USD in 1992 and experience an average annual growth rate of 34 percent in the 1991-1994 period. One example is the infrastructure which deals with water and sewer systems. The Federal Government has created the National Water Commission which is the regulating institution that manages water. Today 22 percent of the total Mexican population lives the metropolitan area of the Valley of Mexico and is the most important consumer of potable water. An example of the complexity of supplying water to the Mexico City area is the Cutzamala River infrastructure, which brings water to the city from 127 kilometers and raises it 1,200 meters.

In 1990 Mexico had a total of 16 million dwellings of which 3.3 million were not connected to the public water supply system. In 1992, the National Water Commission was granted a USD 316 million budget. PRONASOL another agency in 1992 had a total investment of USD263 million for the expansion of water and sewer system. Today in Mexico City they can only account for 30 percent of the water being used. The balance is lost to leaks or illegal hook-ups. Obviously with this kind of commitment to infrastructure there is a need for AGI's services. With an estimated population of 95 million people in 1995, the estimate population (20-49 years old) that will need a house will increase by 42 percent. With an expected total population of 104 million people by the year 2000, the figure will increase 45 percent. The need for infrastructure and associated services is enormous. Much of the above detailed statistics were gained from the US Dept. of Commerce, US & Foreign Commercial Service market research for Mexico.

We have discovered that the Mexicans are anxious to deal with American firms for a number of reasons. We are closer than European countries and certainly nearer than Asia. Many of the Mexicans have been educated in this country, many in the Boston area, so they are accustomed to dealing with Americans, they speak both English and Spanish and are in the same time zones.

AVAILABILITY OF DATA

In addition to dollars, Applied Geographics needs good data. What can the federal government do for small companies in this era of downsizing and converting defense activities to other areas? Make the databases available which various agencies have for these countries. In order to perform our services AGI needs good data bases. In the waning days of the Bush administration I visited with the White House counsel and the EPA counsel. There seemed to be great reluctance to release available data for commercial use. In the United States we are fortunate to have good data readily available. The geographic and demographic data is essential for planning, marketing and analysis.

SPECIFIC EXAMPLES OF CONTRACTS FOR AGI

As we briefly discussed Applied Geographics, Inc. has been marketing extensively in Mexico over the past year. I accompanied Governor Weld on his Trade Mission in December and as a result met a representative of Grupo Gutsa which had formed a joint venture with a British water company to bid on the privatization of the water and sewer system of Mexico City. As a result of that meeting I contacted Parson Brinckerhoff, Inc. and together we put together a bid to do the survey and mapping work necessary for the project. Since then the Mexican/British joint venture has been awarded five of the sixteen delegations (neighborhoods) in Mexico City and expects to sign a contract with the Water Commission shortly. Parsons Brinckerhoff, Inc. and Applied Geographics, Inc. expect to sign a contract shortly thereafter for the survey and mapping portion. The total contract for PBI/AGI is expected to be in the neighborhood of $6 million USD. Parsons is an established international firm, but for Applied Geographics, Inc. this is an extraordinary adventure. AGI is a two year old company, 67 percent owned by me and as such certified as a WBE/DBE (woman owned business, disadvantaged business enterprise). Obviously, Mexico represents an enormous market for emerging specialized technology firms.

In addition to the water project. AGI has signed an agreement with a Mexican Engineering firm to jointly prepare environmental impact reports. SEDESOL has a requirement that only firms approved by SEDESOL can conduct these studies. In order to be approved a firm must have the technology and experience in these areas

and a joint venture with an American firm provides the experience and technology. The Mexican Association of Engineers is obviously upset about this requirement, but I believe it demonstrates the Mexican government's commitment to satisfying environmental concerns raised during the NAFTA discussions.

During our last trip to Mexico, we met with a chemical manufacturing firm which is relocating a facility from Mexico City to an area outside the Federal District. The firm was very close to getting approval for the first plant relocation. The individual we met with indicated that there were nine more plants which have to be relocated. This same individual said that his American customers had visited and discussed the new facility and its internal recycling processes. Clearly this one firm is responding to the present environmental situation and investing major resources in relocating its facilities.

My husband is in Mexico today dealing with two specific projects. Just by being in Mexico we become aware of potential business, not only for AGI but for larger firms. One is a proposal to a Mexican marketing firm for a "turnkey" GIS system. AGI would format Mexican data, load it into a GIS system and provide training. The other project came to us through our Mexican agent. He became aware of this project and asked if we knew of a firm which had the capacity to perform this work. We have contacted a much larger firm in the Cambridge area who has the capacity to do this particular project which may have a small GIS piece. So not only are we finding work for ourselves, we are also identifying projects which need the capacity of much larger firms. And thanks to our membership in the Environmental Business Council we are able to make the connections.

During this past year, I have been struck by the aggressive presence of the Canadian government and its environmental firms. I spoke at PRO-ECO '93 in Monterey, Mexico last month on AGI's work associated with the closing of the U.S. Army base, Fort Devens in Massachusetts. AGI has developed a GIS (geographic information system) for integrating all of the data associated with the required cleanup and potential reuse of the base. There were three EBC firms at the conference and no more than six others from the US, but Canada had just opened a trade office in Monterey and there was a very strong Canadian presence at the conference.

As a former local elected official with nine years experience, a former state bureaucrat with 10 years experience I recognize the importance of input from the business sector in developing appropriate policy. I thank you for this opportunity to comment. I thought you might be interested in the details of some of our adventures in Mexico. All of this is the result of being a member of the Environmental Business Council. Both Don Connors and especially Jack Driscoll have been very supportive of a new company and I appreciate their interest and help. If I can help you or provide further information please let me know.

SUMMARY

There are two major hurdles for a small company: funding and data. In AGI's case the data is a particular kind of data. For many companies, it is the data about the marketplace and the staff at the American Embassy in Mexico City has been superb. There is a great deal of information, but for a small company to assemble all of the data is time consuming. The Foreign Trade Office in Massachusetts provided us with valuable information for the trade mission in December. A few other small companies have approached me for copies of that information. The opportunities are there. We need funds and data to be successful. From my reading of the summary of the National Environmental Trade Development Act of 1993, Sections 5, 6, 7 and 9 are critical to meeting these two needs.

Thank you for this opportunity to present my experiences to you. I hope they will be instructive.

Senator KERRY. Thank you very much, Ms. Gardner.

Just taking up on your last point there, the chairman of the full Commerce Committee, Senator Hollings, has introduced a bill of which I am a cosponsor, and we have actually a couple of portions of it that we have added, which are exactly geared to try to help in that transfer of technology that you have just talked about—the information and the data base. And if we can get this passed through here and begin to augment these technology centers around the country and link them to the universities and to corporate entities, the flow of information could just be so helpful in increasing what you have just talked about.

And I am delighted to have your specific description of what you call your adventures in Mexico. I hope they are not all adventures, but enterprises and so forth.

But I really think it is very helpful to have that for the record, and I really do welcome it.

Let me just say that each of you, as you can tell, have sort of described big, small, different kinds of technologies. And really the purpose of the breadth of this panel, which is a large panel, obviously, is to try to underscore the vast panoply of opportunity here—woman-owned entities, small business—I think you have eight people; correct? Consulting, self-start initiatives, working already in Mexico; in sum, good opportunities. But the key point you made was that Governor Weld, and that trip, helped link you up. And that is Government involvement.

And Mr. Routhier is a classic example of an individual who started a family business. And here we have a Fortune 500 company, and so on and so forth.

All of you represent a tad of the opportunities here.

Now, a key question before this committee is how to enhance this proposition the most.

Now, I take it I do not have to go through the formality of asking each of you whether or not this is a significant field with enormous additional opportunity. There is no dissent there; am I correct?

Mr. BIELSKY. That is correct.

Mr. PETRILLO. Correct.

Mr. MUNSON. That is correct.

Ms. GARDNER. That is correct.

Senator KERRY. And that also it is greatly untapped; would you all agree with that?

Mr. DRISCOLL. Yes.

Mr. MUNSON. Yes.

Mr. ROUTHIER. Yes.

Senator KERRY. And that the 40 percent we have today could conceivably become 20 percent or it could become 60 percent, depending on what we decide to do; is that a fair assessment?

Mr. DRISCOLL. That is exactly right.

Senator KERRY. Does anybody disagree with that?

[No response.]

Senator KERRY. So, the key question here is: How do we best harness the capacity of our Government and of you in the private sector to maximize this?

And I just want to make certain everybody is really highlighting that, because that is what this hearing is about and that is the key thing to focus on. We have got this bill that proposes to try to create the council and enhance the capacity of the Government to be involved, bring the private sector in, et cetera.

What else or what within that makes the most difference to each of you? What do you need? As you sit here, what are you most frustrated about or what do you just feel really would make a huge difference to your capacity to grow?

Ms. Gardner.

And I am going to ask each of you to just run it down quickly. Yes.

Ms. GARDNER. When we were in Mexico in December with Governor Weld, and I met the representative from Grupo Gutsa, he pounded the table and he said: "Why has it taken you so long to find me?" And we had been in Mexico at that point 6 months, and we had met with various people. Now, there were no major American companies forming joint ventures—there were British companies and French companies—to do the basic work on the water and sewer system. But none of those joint ventures had the GIS technology.

And so, I guess if the American marketing had been aware of this privatization of the water and sewer system, there might have been a stronger American presence involved in it.

Senator KERRY. Anybody else want to add to that?

Mr. ROUTHIER. Well, I think one of the problems is the marketing. Finding somebody over there. I mean, the language barrier, I mean, you know, if you go to Honduras or South America or any places like that, where you would like to be able to do something with.

Senator KERRY. Have you tried taking your technology to some other places?

Mr. ROUTHIER. We have had from the different shows we were at, we have had people from Japan, Brazil, Honduras, but we lose communication. For some reason or another, they have different regulation that they have got to go through their Ambassador. And one thing leads to another.

Senator KERRY. Do you find it difficult to get a focus on who can really help you make this connection and follow through on it?

Mr. ROUTHIER. I have been unable to really pinpoint in what direction to go.

Senator KERRY. Have you been in touch with the Commerce Department?

Mr. ROUTHIER. No, I have not.

Senator KERRY. OK.

Mr. ROUTHIER. No, I have not.

Senator KERRY. Well, maybe the Commerce Department needs to do a better job of letting people know it is there to do this. And others need to know how to follow up and go through that.

Mr. Bielsky.

Mr. BIELSKY. Senator, from our rather unique perspective, one of the key components that your bill addresses that we feel strongly about is the education prong—educating not only the environmental engineers in particular countries, but even at the consumer level. One thing that we have found is that consumers are willing to pay a minor fee for doing the right thing environmentally, as long as they understand what that money is going for and what it is doing.

We have engaged in a massive consumer education program in the United States, and we think we are benefiting from that. And we think more Government support——

Senator KERRY. How do you do that? What is the methodology?

Mr. BIELSKY. We have a program called "We Care." It is a trademarked program where customers—if you, for example, go and have your oil changed at a quick lube shop, that quick lube shop may incur a cost for our service to haul away the used oil that

is generated from your car. And it is not a big fee, but it still comes out to 25 cents per gallon or so.

We have a whole marketing campaign that tries to address the consumer—to you as a generator of that used oil in your car—as to the need for environmentally responsible management of the liquid that you have generated, and to be understanding of the quick lube operator who is charging you a fee for that service. And we have engaged in TV advertisements—very expensive—but what we have found is that the consumer understands, and when he understands, he is willing to bear part of that burden. It is a minor burden economically, 25 cents on a $21 oil change.

And so the education prong of your bill we think is very significant, and maybe it should be considered to be expanded beyond the levels that the Peace Corps was talking about, which I also think is very good.

Senator KERRY. Mr. Driscoll.

Mr. DRISCOLL. Yes, I think that the environmental business centers really are a key part for promoting business overseas. They are really going to help. And I think trying to get industry working together, both in the foreign countries and here, I think the EBC, the various regional EBC groups, can do a good job on this side. And then, if we have somebody or a group like these environmental business centers in various countries, I think they can be a big help.

Now, if we look at also the additional needs of small, medium, and large sized companies, they are really quite different. Small companies are probably first-time exporters. I really think that what the Government should do is to give them large grants to get them induced to getting into new markets. I mean, every other country in the world does it. I mean, a small country like Finland—we have an operation in Finland—and what the Finnish government does for us for parts that we are exporting, they pay 50 percent of our marketing materials. If we go to Russia, they pay 50 percent of our costs of salaries and expenses in some cases for specific projects.

So, a country of 5 million does this for their companies. And the United States does not have anything like this. Every other country in the world does that.

Medium-sized companies like ours, for example, one of the needs that we have is basically, you know, banks do not really want to lend you money to start foreign subsidiaries. In many cases, they do not even want to loan money for foreign receivables. Although the FCIA program the Government has is an ideal vehicle. And since that has been streamlined, that makes it very easy to borrow on foreign receivables.

But if there was some way that the Government could provide loans—I am not talking about grants—even loans to start subsidiaries overseas, this would help, particularly with the service industry. The service industry wants to start a joint venture or basically, you know, start their own operation overseas, it is very costly. So, if there were loans available, low-interest rate loans for 3, 4, 5 years, I know our business in almost any country we start will double or triple within about 2 or 3 years.

I mean, Germany is probably five times the business we are doing now than we ever did with the distributor.

Large companies, basically, are usually looking for financing vehicles. And OPIC sometimes does not provide the type of financing that they would like.

So, those are just some incidental financing things that really could help kick the environmental industry off, or any other, for that matter. It does not have to be the environmental industry. Everybody has the same kind of problems.

Senator KERRY. Mr. Petrillo.

Mr. PETRILLO. Senator, just a couple of points.

I mentioned before international business is very difficult, time consuming, and costly. It is very much different from doing business Stateside, which I think a lot of small- and medium-size businesses are used to. Having connections and contacts in different countries is critical. Having a presence is very helpful, but, again, that is a major expense for smaller companies.

Second, I think marketing intelligence and information management—I think you have heard that across this panel—is absolutely critical. By the way, it is a two-way street.

Third using the Foreign Commercial Service and the Peace Corps staff that are already there, is an excellent idea. But I think that some of those people may not be very business oriented. And I think they will need some training in order to do that sort of thing.

Last, I heard about incorporating different agencies into this Council and into this program, and I think that is in principle good. But I would just suggest this could become a major problem unless you keep it very focused. And I think the Department of Commerce is the place to keep it focused out of. Give them a mandate and the resources to carry this out and I think it will work. And keep private industry involved.

Senator KERRY. Mr. Munson.

Mr. MUNSON. The programs that are proposed in this legislation lay the basis to solve some of the problems. There is virtually no focus or very little focus at the national level on programs to assist renewable energy abroad—any form of renewable energy.

One small example is Indonesia, where the Japanese have a very large number of nationals working exclusively on supporting their trade, we find that because of the government focus on renewable energy there, special loan programs are offered by the finance institutions, particularly if the people in Indonesia will purchase Japanese equipment. And they have special loan programs that are offered specifically to get them started with Japanese powerplants, and then, presumably, with that experience, they will follow on and exclude other competitors from purchasing equipment from non Japanese suppliers.

In Indonesia, the U.S. geothermal industry, with the exclusion of Unocal, a big company, is not doing very well as a group. In fact, we are being outpaced by the New Zealanders, who have a government-sponsored program that has been very effective. It maintains offices and liaison at the highest level and provides access.

Without those kinds of things, we do not tend to do very well around the world. It is much more difficult in an already complex business.

And I really would like to see us focus on the former Soviet Union. I think doing business there is very difficult. We have had some experience. And without Government help at the highest level, I do not think we will penetrate that marketplace if and when it becomes a place to be doing business. And there is a great opportunity there with all the nuclear plants going down, and the coal problems that you mentioned and others have mentioned, landscapes ruined, not even suitable for agriculture. It is a great opportunity for renewable energy and natural gas, and we need a lot of help to penetrate those markets.

Senator KERRY. Well, I could not agree with you more, folks. Unfortunately, we have gone about an hour beyond where we were supposed to, and I have got to get over to this conference. But I will leave the record open in the event that we want to follow up in any individual areas with a couple of questions.

I know, Mr. Driscoll, you talked about submitting something, which you are free to do. If you do not want to, I think you gave a very good statement, and I am not sure if you should consider it mandatory, at any rate. But if you do want to go further in articulating that, we would be happy to welcome it.

I think there is a great opportunity here, obviously, to synthesize some of your recommendations to us, and I hope that we can move in fairly short order. I am going to try to see what the possibilities of that will be. And I think this morning's testimony has been very helpful in creating a focus, as well as a sense of urgency.

So, let me proceed to try to see how rapidly we can try to get some consensus within the committee and elsewhere and try to proceed forward. And I invite any of you, if you have further thoughts that occur to you in terms of the importance of doing this or ways to articulate it or ways in which we can maximize these opportunities without intruding necessarily on the traditional approaches which have guided so many people's attitudes in this country about how to do business. There is a certain restraint factor that just comes from ideology and practice, and some people do not want to change, and we need to push that curve a little bit, but we also need to not build up so much opposition that you wind up as we did in the eighties, where everybody started defining things in the context of—"oh, my God, industrial policy"—and so the whole debate got lost and nobody talked about anything.

We do not want that to happen. But we do sure as heck want to recognize what these other countries are doing and wake up to the realities of helping you folks to be able to compete and do business. And I think we can do that.

So, thank you for coming and sharing your thoughts with us, and keep on moving, because I think you are in a very exciting area. And we hope to be able to be helpful.

We stand adjourned.

Thank you.

[Whereupon, at 12:57 p.m., the hearing was adjourned.]

APPENDIX

PREPARED STATEMENT OF DAVID GARDINER, ASSISTANT ADMINISTRATOR, OFFICE OF POLICY, PLANNING AND EVALUATION, ENVIRONMENTAL PROTECTION AGENCY

My statement will include the following: (1) a brief overview of the growing global market for environmental technologies, (2) a summary of ongoing Administration initiatives on environmental technology innovation and dissemination, and (3) a brief description of EPA's role within this effort I will conclude with some general principles to aid in the further development of the National Environmental Trade Development Act of 1993.

EPA strongly supports the development of a national strategy, led by the Department of Commerce (Commerce) and involving all relevant Federal agencies, to promote greater dissemination of U.S. environmental technologies and services in solving international environmental problems. EPA suggested some preliminary ideas for such a strategy in our December 1992 report, "Global Markets for Environmental Technology: Defining a More Active Role for EPA within a Broader U.S. Government Strategy." More recently, President Clinton directed the Department of Commerce, working closely with EPA and the Department of Energy, to develop a strategy to increase exports of U.S. environmental technologies and to improve our competitiveness in the growing market for environmentally sound products and services. A proposal for a new Environmental Technology Initiative is also included in the President's budget request for FY 1994.

EPA was pleased with the recent reconstitution of the Trade Promotion Coordinating Committee, chaired by Secretary of Commerce Ron Brown, and the establishment of its Environmental Trade Working Group. Drawing on EPA's technology innovation and international technical assistance and capacity-building programs, we believe that the Agency has an important role to play within overall U.S. Government efforts. To that end, we are working with the Department of Commerce and other Federal agencies in responding to the President's Earth Day directive.

THE GROWING GLOBAL MARKET FOR ENVIRONMENTAL GOODS AND SERVICES

In 1992, an Organisation for Economic Cooperation and Development (OECD) report projected the global market for environmental technologies to reach nearly $300 billion by the year 2000. Other estimates are even higher, with the Environmental Business Journal and the Environmental Business Council of the United States projecting that the market could reach $400 billion by the year 1996.

The unprecedented growth in this global market is believed to result from a number of factors. First, as countries around the world seek to reduce the risks and costs imposed by pollution, governments are enacting stringent environmental regulations and committing the resources necessary to enforce them. Second, companies themselves are recognizing that cleaner manufacturing processes not only mitigate waste but heighten cost-savings and competitiveness. As a result, industry increasingly has been adopting voluntary cleaner technologies, and new market opportunities have developed. Third, non-governmental and multilateral lending and development organizations are insisting that protection of the environment pre-condition their assistance and lending activities. Together, these factors offer U.S. firms an unprecedented opportunity to meet new and burgeoning international needs.

Looking at the industry from another angle, in 1991, revenues from the U.S. "envirotech" industry accounted for nearly a million U.S. jobs; that number is projected to jump to over one and one-quarter million by 1996. According to an Environmental Business Journal estimate, if government and business develop a cohesive program to help U.S. firms capitalize on international markets, by 1997 this industry could support over one and one-half million jobs.

The international market for environmental goods and services is currently dominated by demand for "end-of-pipe" pollution control equipment. The OECD projects that the markets for both pollution control equipment and services will increase

steadily through the end of the century, with demand for equipment projected to grow at 5 percent per annum. The demand for services is expected to grow even faster as pollution control technologies are more fully integrated into industrial products and processes. In response to these bright prospects, the United States and a number of other countries have begun to position themselves to take advantage of the lucrative business opportunities.

The U.S. has long been a leader in providing environmental protection products and services at home. Our aggressiveness in setting and enforcing environmental standards established domestic environmental goods and services firms as front runners early on. However, as other nations have adopted and enforced stronger laws over time—particularly laws utilizing quality standards and laws that emphasize preventive, rather than end-of-pipe, solutions—overseas environmental firms have also become very competitive. Japan, for example, has had strict emissions standards in place since the early 1970s, and is generally considered the world leader in air pollution control technologies. The same can be said for Germany and water pollution control technologies. While no comprehensive, technology-specific evaluation of U.S. strengths has yet been issued, U.S. firms have been identified as market leaders in waste technologies and as being well-positioned in general environmental services.

U.S. TECHNOLOGY INNOVATION AND INTERNATIONAL DISSEMINATION PROGRAMS

In addressing the wide range of environmental problems confronting the United States, the Administration has identified the need for government to play a partnering and leadership role—both domestically and internationally—in helping to encourage bringing environmental technologies from the entrepreneur's garage to the global market. Domestically, it is essential that government help promote a bridge between laboratory and full-scale commercialization. Internationally, it is necessary for us to work with other governments and international organizations in building the environmental infrastructures upon which further environmental progress depends. Supplemented by U.S. technical assistance and capacity-building programs, U.S. technologies and services can play a critical role in meeting international environmental needs.

As you know, this Administration has acted swiftly to propose an environmental technology program that will stimulate investments in innovation and coordinate environmental technology efforts throughout the Federal government. The Administration has, for example, proposed a $36 million Environmental Technology Initiative in the Fiscal Year 1994 budget now before Congress. The Administration has established a technology policy initiative, under the Vice President's leadership, which will be coordinated jointly by the White House Office of Science and Technology Policy and the National Economic Council.

Secretary of Commerce Ron Brown has reconstituted the Trade Promotion Coordinating Committee, in accordance with the Export Enhancement Act of 1992, to mobilize and integrate overall U.S. trade and export promotion activities. Finally, in the President's Earth Day speech of April 21, 1993, President Clinton directed EPA and the Departments of Commerce and Energy to "* * * create a strategic plan to give our companies the trade development, promotional efforts, and technical assistance they need to turn these advances into jobs here in America, as well as to help promote a better environment." A multi-agency ad hoc working group chaired by Kathy Sullivan, chief scientist at the National Oceanic and Atmospheric Administration (NOAA), is already working on the plan.

EPA'S ROLE WITHIN OVERALL U.S. GOVERNMENT EFFORTS

EPA has a critical role to play within overall U.S. technology cooperation and export assistance efforts. With respect to the supply side, for example, EPA is forging partnerships with other Federal agencies and the private sector in facilitating technological innovation. This cooperation includes the dissemination of credible information, the improvement of EPA and State regulatory, permitting, and enforcement programs, and the funding of innovative technology programs.

EPA and other Federal agencies have worked successfully with industry in implementing the provisions of the Federal Technology Transfer Act (FTTA). The Agency has instituted a Design for the Environment Program in which EPA works collaboratively with industry to identify process and raw material modifications that can prevent the generation of pollutants.

On the demand side, EPA and the Agency for International Development (MD) are working closely with other governments and international organizations in building the environmental infrastructures upon which further international environmental progress depends. Under the U.S.-Asia Environmental Partnership, the

Support for Eastern European Democracy Act (SEED), the Freedom Support Act, the AID-EPA Environmental Pollution Prevention Project (EP3), and other programs, EPA is engaged in a comprehensive effort to strengthen or build environmental institutions and capabilities throughout the developing world. In addition to serving U.S. environmental objectives, such programs help enhance the demand for U.S. environmental technologies and expertise.

EPA was instrumental in establishing the U.S. Environmental Training Institute (U.S. ETI), a partnership with the private sector, to introduce foreign officials to U.S. environmental technologies and services. EPA and Commerce also collaborated in the first-time publication this month of The Green Pages. As a stand-alone version and as an environmental supplement to the Department of Commerce's The Export Yellow Pages, this brochure lists over 1,000 U.S. companies eager to sell their products and services overseas.

EPA, Commerce, and the Trade and Development Agency recently co-sponsored a "reverse" trade mission for Brazilian officials to determine how U.S. companies can play a role in cleaning up the Tiete River in Sao Paulo, Brazil. Originally initiated through EPA's technical assistance program with Brazil, this project allowed Brazilian industry and political leaders to visit U.S. cities that have enacted similar river clean-up programs and to view first-hand the successful application of U.S. technology. The Governor of Sao Paulo has subsequently asked EPA to play an active role in overseeing follow-up to the project, thereby laying the foundation for future environmental collaboration.

EPA's cooperative programs with Mexico provides an excellent example of the Agency's environmental programs in action, as well as their potential benefits for U.S. trade and export programs. In 1991, the Government of Mexico allocated $4.6 billion in expenditures, loans, and credits to address environmental concerns. This represents a remarkable opportunity for U.S. suppliers, who already provide over 45 percent of Mexico's environmental technology imports.

EPA has been working closely with the Government of Mexico in solving a wide range of environmental problems both along the border and within Mexico City. The Border Plan, now in its first stage has helped lay the groundwork for a sustainable environmental relationship between the two countries. The broader North American Free Trade Agreement (NAFTA) should only enhance this relationship.

EPA has, for example, initiated a personnel exchange program with Mexico under which EPA technical staff provide direct assistance to the Mexican Secretariat of Social Development (SEDESOL), as well as to Mexico City's Commission for Pollution Prevention and Control. Through this assistance, EPA is supporting the Trade and Development Agency's efforts to promote greater access for U.S. firms to the growing hazardous waste management market in Mexico City. EPA has also developed, again in cooperation with the Mexican government, a bilingual pollution prevention guide for the maquiladora industry along the border, with an emphasis on alternative technologies. Coupled with The Green Pages, described earlier, this guide will serve as a useful mechanism for enhancing market access to this significant market south of the border.

All of these efforts require active cooperation with other Federal agencies and outside organizations. In this regard, EPA is forging partnerships with the Department of Commerce and other Federal agencies. In response to the President's Earth Day directive, for example, work is already underway to catalog existing Federal environmental technology programs, with EPA particularly involved in inter-agency work groups on small and growing businesses, infrastructure, and broader technology issues. We also look forward to playing a critical role on the Trade Promotion Coordinating Committee and its environmental subgroup.

EPA'S COMMENTS ON THE NATIONAL ENVIRONMENTAL TRADE DEVELOPMENT ACT OF 1993

From the perspective of EPA's experience and unique relationship to environmental technology issues, I would like to offer four basic principles as guidance in the consideration of this important issue:

(1) U.S. suppliers of environmental technologies and services can play a critical role in solving international environmental problems. Accordingly, U.S. technology innovation and diffusion programs should focus not only on the development and use of environmental technologies within the United States, but also on their potential and real applications internationally. Technology innovation programs improve the competitiveness of U.S. suppliers. International technical assistance and capacity-building programs enhance the demand.

(2) The U.S. Government can play a catalytic role, but it cannot and should not act as a substitute for the dynamism, creativity, and resources of the private sector.

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To that end, drawing on a number of successful models already underway, Federal agencies should continue to foster greater partnerships with outside organizations and the private sector in facilitating the dissemination of environmental technologies abroad.

(3) The U.S. Government must foster greater partnerships among the wide range of Federal agencies already involved in the Government's technology innovation and diffusion programs. Led by the Department of Commerce and drawing on the comparative advantage of each department or agency, such a coordinated program will help achieve U.S. objectives on trade, competitiveness and environmental protection.

(4) The U.S. Government must eliminate informational, regulatory, and other barriers to technology innovation. International technical assistance and capacity-building programs should focus on information dissemination, and education and training; the establishment of environmental regulations and standards; the development of environmental monitoring and enforcement capabilities; and the application of pollution prevention, risk management, and other environmental management techniques.

We believe these principles can help .set the stage for a more targeted and integrated U.S. Government approach.

I would like to stress the need to provide the Administration with as much flexibility as possible in achieving these goals. Legislation that locks in bureaucratic structures may prevent the Administration from responding effectively to new challenges and opportunities. For instance, the creation of the Environmental Trade Promotion Council in legislation and specifying its structure could complicate Administration efforts already underway in this area. I hope that we can work together to define our common goals without limiting our options for achieving those goals.

I would like to thank the Subcommittee for the opportunity to present EPA's views.

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